



Australian Government

MEA07 Aeroskills Training Package

Release: 3.0

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Modification History

Version Modification History

Version	Release Date	Comments
3	September 2010	- Qualification added at Certificate IV level and related units of competency included for Armament - Component workshop units and qualifications revised - Sustainability units imported and included in all qualifications as an additional mandatory unit - New units relating to maintenance of small aircraft added - Diploma and Advanced Diplomas of Aviation Maintenance Management revised to include references to new Civil Aviation Safety Regulations Refer to History for details. ISC upgrades - Inclusion of Skill Sets in three categories. All qualifications reformatted to comply with flexibility nomenclature. Corrections to titles of eight units on NTIS (A and B versions where required): MEA124B, MEA125B, MEA131B, MEA136A, MEA137A, MEA138A, MEA143B, MEA233C. - Refer to mapping for corrections.
2	8 April 2009	Qualifications at Certificate III and IV levels and units of competency added for Aircraft Life Support and Furnishing. Units of competency applicable to the CASA B1 and B2 Aircraft Maintenance Engineer Licences and Appendix 1 amended to reflect

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PO BOX 289

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Preliminary Information

Important Note to Users

Training Packages are not static documents; they are amended periodically to reflect the latest industry practices and are version controlled. It is essential that the latest version is always used.

Check the version number before commencing training or assessment

This Training Package is Version - check whether this is the latest version by going to the National Training Information Service (www.ntis.gov.au) and locating information about the Training Package. Alternatively, contact Manufacturing Industry Skills Council at <http://www.mskills.com.au> to confirm the latest version number.

Explanation of version number conventions

The primary release Training Package is Version 1. When changes are made to a Training Package, sometimes the version number is changed and sometimes it is not, depending on the extent of the change. When a Training Package is reviewed it is considered to be a new Training Package for the purposes of version control, and is Version 1. Do not confuse the version number with the Training Packages national code (which remains the same during its period of endorsement).

History

History

MEA07 Version 3

The Australian Defence Force (ADF) sought the development of a qualification and units of competency for the maintenance of aircraft egress and armament stores suspension and management systems and system components. To achieve this:

- one specialist technical stream unit was developed from a unit in the Public Safety Training Package
- others were adapted from existing ADF Enterprise Units and added to relevant existing common units and Avionic and Mechanical Technical Stream units to meet the ADF training/employment requirement

The qualification is MEA41210 Certificate IV in Aeroskills (Armament) and the applicable new units of competency are:

- MEA601A Maintain aircraft egress systems
- MEA602A Remove and install aircraft stores management system components
- MEA603A Remove and install aircraft stores suspension systems and components
- MEA604A Inspect, test and troubleshoot aircraft stores management systems and components
- MEA605A Inspect, test and troubleshoot aircraft stores suspension systems and components

The Civil Aviation Safety Authority (CASA) and a representative group of industry stakeholders have developed a proposed licensing structure for the maintenance of small aircraft. As part of this process additional units of competency have been developed that are required to effectively cover small aircraft maintenance needs. While qualifications that will support the licensing system must await final decisions on regulatory requirements, it has been possible to add the new units to existing qualifications at Certificate IV level as additional electives. This will enable training pathways that are applicable to small aircraft maintenance organisations. These units are:

- MEA274A Maintain basic light aircraft electrical systems and components
- MEA275A Maintain basic light aircraft instrument systems and components
- MEA276A Maintain basic aircraft communication and radio navigation systems and components
- MEA277A Maintain twin engine aircraft electrical systems and components
- MEA278A Inspect, test and troubleshoot instrument display systems and components
- MEA279A Inspect, test and troubleshoot full authority digital engine control systems
- MEA280A Inspect, test and troubleshoot flight management systems and components
- MEA281A Maintain light aircraft AC powered instrument systems and components
- MEA289A Maintain basic light aircraft avionic systems and components
- MEA290A Fit avionic modification sheetmetal components
- MEA291A Inspect, test and troubleshoot fixed wing single axis autopilot systems and components

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- MEA351A Maintain airframe systems of basic light fixed wing aircraft
- MEA352A Maintain basic rotary wing aircraft systems
- MEA353A Maintain basic light aircraft engines and propellers
- MEA354A Maintain light aircraft pneumatic systems
- MEA355A Maintain light aircraft air cycle air conditioning systems
- MEA356A Maintain light piston engine aircraft pressurisation systems
- MEA357A Inspect, test and repair aircraft fabric surfaces
- MEA358A Re-cover aircraft fabric surfaces
- MEA359A Inspect and repair aircraft wooden structures
- MEA360A Maintain aircraft diesel engines
- MEA361A Maintain aircraft two stroke petrol engines
- MEA362A Maintain aircraft vapour cycle air conditioning systems
- MEA363A Inspect, repair and maintain structures and related components of non-pressurised small aircraft
- MEA364A Maintain and/or repair small aircraft mechanical components or parts

Avionic and Mechanical Certificate IV Component Workshop training pathways and applicable units of competency have been revised as a follow-on task from the development of MEA07 to overcome identified industry difficulties in attaining existing units and qualifications. The new units are:

- MEA282A Repair or overhaul aircraft pulse system components
- MEA283A Repair or overhaul aircraft display, control and distribution system components
- MEA284A Repair or overhaul aircraft instrument system components
- MEA285A Repair or overhaul aircraft radio frequency communication and navigation system components
- MEA286A Repair or overhaul aircraft electrical/electro-mechanical components
- MEA287A Repair or overhaul aircraft oxygen system components
- MEA288A Repair or overhaul aircraft audio and visual systems and reproducers
- MEA380A Repair and/or overhaul aircraft hydraulic system components
- MEA381A Repair and/or overhaul aircraft pneumatic system components
- MEA382A Repair and/or overhaul aircraft fuel system components
- MEA383A Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules
- MEA384A Repair and/or overhaul gas turbine engine combustion section components and/or modules
- MEA385A Repair and/or overhaul gas turbine engine turbine and exhaust section components
- MEA386A Repair and/or overhaul gas turbine engine ancillary section components
- MEA387A Test gas turbine engines and engine modules after overhaul or repair
- MEA388A Repair and/or overhaul piston engines
- MEA389A Repair and/or overhaul propellers

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- MEA390A Repair and/or overhaul rotary wing dynamic components
- MEA391A Repair and/or overhaul aircraft mechanical system components

Organisations/individuals consulted during the development of these units and the revised training pathways included:

- ADF
- CASA
- AMROBA
- Airflite
- BAE Systems
- BF Goodrich
- Hawker Pacific
- John Holland Aviation Services
- Pacific Avionics
- Qantas
- Raytheon
- Rosebank Engineering
- Sikorsky Aircraft Australia (Helitech)
- TAE Aviation
- Tenix
- Mr George Faulkner

The Diplomas and Advanced Diplomas of Aviation Maintenance Management have been revised to include in the relevant units references to the forthcoming Civil Aviation Safety Regulation Parts 145 and Part 42 Sub-Part F.

Following stakeholder input and CASA agreement the Diplomas of Aeroskills have had the imported units MEM17001B Assist in development and deliver training in the workplace and MEM17002B Conduct workplace assessment deleted and reference to them has also been deleted from unit MEA113B Supervise civil aircraft maintenance activities and manage human resources in the workplace. The qualifications have had their version code updated as MEA50110 Diploma of Aeroskills (Avionic) and MEA50210 Diploma of Aeroskills (Mechanical) and MEA113B becomes MEA113C.

Other new units of competency and existing units that have undergone significant revision are:

- MEA116A Apply occupational health and safety procedures at supervisor level in aviation maintenance has been revised to cover also Certificate IV training pathways that lead to employment as a supervisor and becomes MEA116B
- MEA145A Conversion from allied trades for employment in aviation maintenance workshops is a new unit for inclusion in specialist Skill Sets that will assist individuals from specified allied trades to attain competencies required for employment in aviation component maintenance workshops
- MEA202B Remove and install basic aircraft electrical system components has been revised to improve application to small aircraft maintenance and becomes MEA202C

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- MEA210B Inspect, test and troubleshoot basic aircraft electrical systems and components has been revised to improve application to small aircraft maintenance and becomes MEA210C
- MEA261B Use electronic test equipment has been revised to improve its applicability to a number of enterprises and the unit becomes MEA261C
- MEA303B has been revised to include environmental regulatory requirements specific to halon fire extinguishers and the unit becomes MEA303C
- MEA365A Assess structural repair/modification requirements and evaluate structural repairs and modifications is a new unit that replaces MEA324B following requests to change the level of NDT coverage in MEA324B. MEM24002B and 24012B have also been deleted.
- MEA366A Perform borescope inspections is a new unit that meets a CASA requirement for the grant of a specific maintenance authority.

A number of existing MEA units have also had their knowledge statements expanded to improve their usability in the General Aviation sector once the Aeroskills Training Package becomes the only avenue to aircraft maintenance engineer licensing. These units have had their version identifier incremented but are fully equivalent to the earlier version of the unit. Information on updated units is contained in the mapping of units in version 3 to units in version 2.

To comply with government directions regarding attainment of competencies in sustainability the following units have been imported:

- MSAENV272B Participate in environmentally sustainable work practices
- MSAENV472B Implement and monitor environmentally sustainable work practices
- MSAENV672B Develop workplace policy and procedures for environmental sustainability

The applicable unit has been added as a mandatory unit to each qualification and this has necessitated a version code update for all qualifications.

Skill Sets

Inclusion of Skill Sets in the following areas

22 Skill Sets aimed at the preparation of individuals with allied trade qualifications for employment within aviation component workshops

55 Skill Sets that specify CASA requirements for the removal of exclusions from B1 and B2 licences

3 Skill Sets that specify CASA requirements for the grant of specific authorities by CASR Part 145 and 42F MROs

Summary of AQF qualifications in this Training Package

Qualification Code	Title
MEA20410	Certificate II in Aeroskills
MEA20510	Certificate II in Aircraft Line Maintenance
MEA20610	Certificate II in Aircraft Surface Finishing
MEA30110	Certificate III in Aircraft Surface Finishing
MEA30310	Certificate III in Aircraft Life Support and Furnishing
MEA40610	Certificate IV in Aeroskills (Avionics)
MEA40710	Certificate IV in Aeroskills (Mechanical)
MEA40810	Certificate IV in Aeroskills (Structures)
MEA40910	Certificate IV in Aircraft Surface Finishing
MEA41110	Certificate IV in Aircraft Life Support and Furnishing
MEA41210	Certificate IV in Aeroskills (Armament)
MEA50110	Diploma of Aeroskills (Avionics)
MEA50210	Diploma of Aeroskills (Mechanical)
MEA50310	Diploma of Aviation Maintenance Management (Avionics)
MEA50410	Diploma of Aviation Maintenance Management (Mechanical)
MEA60110	Advanced Diploma of Aviation Maintenance Management (Avionics)
MEA60210	Advanced Diploma of Aviation Maintenance Management (Mechanical)

Units of competency in this Training Package and their prerequisites

Code	Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	None
MEA103B	Plan and organise aviation maintenance work activities	(MEA101B MEA105B MEA107B MEA108B)
MEA105B	Apply quality standards applicable to aviation maintenance processes	(MEA101B MEA107B)
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	None
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	(MEA105B MEA108B)
MEA111B	Perform administrative processes to prepare for certification of civil aircraft maintenance	None
MEA112B	Plan and implement civil aircraft maintenance activities	None
MEA113C	Supervise civil aircraft maintenance activities and manage human resources in the workplace	None
MEA114A	Certify aeronautical product maintenance	None
MEA115A	Plan and implement aeronautical product maintenance activities	None
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance	None
MEA117A	Apply self in the aviation maintenance	None

	environment	
MEA118A	Conduct self in the aviation maintenance environment	None
MEA119A	Perform administrative processes to prepare for certification of civil aircraft A level line maintenance	None
MEA120B	Manage an aviation maintenance quality system	None
MEA121B	Manage aircraft/aeronautical product configuration	None
MEA122B	Manage aircraft/equipment system performance testing	MEA126B
MEA123B	Manage work environment policy and practices	None
MEA124B	Coordinate change programs in the aviation maintenance environment	None
MEA125B	Develop aviation maintenance personnel	None
MEA126B	Manage aircraft maintenance activities	None
MEA127B	Provide technical advice in the maintenance and management of aircraft and aeronautical product	(MEA349A MEA350A) OR (MEA272A MEA273A)
MEA128B	Provide engineering advice in the modification, maintenance and management of aircraft systems	(MEA349A MEA350A) OR (MEA272A MEA273A)
MEA129A	Investigate technical aspects of aviation occurrences	None
MEA130A	Manage deployed/detached aviation maintenance activities	None
MEA131B	Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment	None
MEA132A	Manage budgetary resources in the	None

	aviation maintenance environment	
MEA133B	Communicate aviation technical and maintenance management knowledge	None
MEA134B	Establish, maintain and evaluate the organisation's occupational health and safety system	None
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	None
MEA136A	Assess aviation maintenance spares and manage repairable items	MEA135A
MEA137A	Write aviation technical publications	MEA135A
MEA138B	Perform aviation technical publication management activities	MEA137A
MEA139A	Perform aviation maintenance - related integrated logistic support management activities	None
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	None
MEA141B	Manage risk in aviation maintenance	None
MEA142B	Manage self in the aviation maintenance environment	None
MEA143B	Develop and manage maintenance error management programs	None
MEA145A	Conversion from allied trades for employment in aviation maintenance workshops	None
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA202C	Remove and install basic aircraft electrical system components	MEA201B
MEA203C	Remove and install advanced aircraft	MEA201B

	electrical system components	
MEA204C	Remove and install basic aircraft instrument system components	MEA201B
MEA205C	Remove and install advanced aircraft instrument system components	MEA201B
MEA206C	Remove and install aircraft basic radio communication and navigation system components	MEA201B
MEA207C	Remove and install aircraft electronic system components	MEA201B
MEA208C	Remove and install aircraft pressurisation control system components	MEA201B
MEA209C	Remove and install aircraft oxygen system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA210C	Inspect, test and troubleshoot basic aircraft electrical systems and components	(MEA202C MEA246C)
MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components	(MEA203C MEA246C)
MEA212C	Inspect, test and troubleshoot basic aircraft instrument systems and components	(MEA204C MEA246C)
MEA213C	Inspect, test and troubleshoot advanced aircraft instrument systems	(MEA205C MEA246C)
MEA214C	Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components	(MEA206C MEA246C)
MEA215C	Inspect, test and troubleshoot advanced aircraft communications systems and components	(MEA206C MEA246C)
MEA216C	Inspect, test and troubleshoot instrument landing systems and components	(MEA206C MEA207C MEA246C)

MEA217C	Inspect, test and troubleshoot fixed wing autopilot systems and components	(MEA207C MEA246C)
MEA218C	Inspect, test and troubleshoot rotary wing autopilot systems and components	(MEA207C MEA246C)
MEA219C	Inspect, test and troubleshoot aircraft pressurisation control systems and components	(MEA208C MEA246C)
MEA220C	Inspect, test and troubleshoot aircraft primary radar systems and components	(MEA207C MEA246C)
MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components	(MEA207C MEA246C)
MEA222C	Inspect, test and troubleshoot aircraft oxygen systems and components	None
MEA223C	Inspect aircraft electrical systems and components	MEA246C
MEA224B	Inspect aircraft instrument systems and components	MEA246C
MEA225B	Inspect fixed wing aircraft automatic flight control systems and components	(MEA207C MEA246C)
MEA226C	Inspect aircraft electronic systems and components	MEA246C
MEA227C	Test and troubleshoot aircraft electrical systems and components	None
MEA228C	Test and troubleshoot aircraft instrument systems and components	None
MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components	MEA226C
MEA230B	Test and troubleshoot fixed wing aircraft automatic flight control systems and components	MEA246C
MEA231B	Inspect, test and troubleshoot rotary	(MEA207C MEA246C)

	wing aircraft automatic flight control systems and components	
MEA232B	Test and troubleshoot aircraft pulse systems and components	(MEA226C MEA246C)
MEA233C	Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components	(MEA207C MEA246C)
MEA234C	Inspect, test and troubleshoot aircraft global navigation systems and components	(MEA206C MEA207C MEA246C)
MEA235B	Perform advanced troubleshooting in aircraft avionic maintenance	None
MEA238B	Perform routine removal and installation of miscellaneous aircraft electrical hardware/components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA239B	Fabricate aircraft electrical looms and harnesses	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA240B	Use electrical test equipment to perform basic electrical tests	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA241B	Perform aircraft weight and balance calculations as a result of modifications	None
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	(MEA201B MEA260B)
MEA252B	Test, align and troubleshoot aircraft synchro and servo system components	(MEA201B MEA260B MEA261C)
MEA260B	Use electrical test equipment	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA261C	Use electronic test equipment	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA262B	Modify/repair aircraft component single layer printed circuit boards	(MEA260B MEA261C)
MEA263B	Modify/repair aircraft component multi-layer printed circuit boards	(MEA260B MEA261C)

MEA264A	Remove and install aircraft electrical/avionic components during line maintenance	MEA265A
MEA265A	Remove and install general aircraft electrical hardware	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA270A	Lay out avionic systems	(MEA101B MEA107B MEA109B)
MEA271A	Lay out avionic flight management systems	(MEA101B MEA107B MEA109B MEA270A)
MEA272A	Apply basic scientific principles and techniques in avionic engineering situations	None
MEA273A	Select and test avionic engineering materials	None
MEA274A	Maintain basic light aircraft electrical systems and components	MEA246C
MEA275A	Maintain basic light aircraft instrument systems and components	MEA246C
MEA276A	Maintain basic aircraft communication and radio navigation systems and components	MEA246C
MEA277A	Maintain twin engine aircraft electrical systems and components	None
MEA278A	Inspect, test and troubleshoot instrument display systems and components	MEA246C
MEA279A	Inspect, test and troubleshoot full authority digital engine control systems	MEA246C
MEA280A	Inspect, test and troubleshoot flight management systems and components	MEA246C
MEA281A	Maintain light aircraft AC powered instrument systems and components	MEA246C
MEA282A	Repair or overhaul aircraft pulse system components	None

MEA283A	Repair or overhaul aircraft display, control and distribution system components	None
MEA284A	Repair or overhaul aircraft instrument system components	None
MEA285A	Repair or overhaul aircraft radio frequency communication and navigation system components	None
MEA286A	Repair or overhaul aircraft electrical/electro-mechanical components	None
MEA287A	Repair or overhaul aircraft oxygen system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA288A	Repair or overhaul aircraft audio and visual systems and reproducers	None
MEA289A	Maintain basic light aircraft avionic systems and components	MEA246C
MEA290A	Fit avionic modification sheetmetal components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA291A	Inspect, test and troubleshoot fixed wing single axis autopilot systems and components	(MEA207C MEA246C)
MEA301C	Perform aircraft flight servicing	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA303C	Remove and install aircraft pneumatic system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302C

MEA306C	Remove and install engines and engine system components	MEA302C
MEA307C	Remove and install propeller systems and components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA308C	Remove and install rotary wing rotor and flight control system components	MEA302C
MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	MEA302C
MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA303C
MEA311C	Inspect and repair/modify aircraft structures	(MEA304C OR MEA317C)
MEA312C	Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	MEA305C
MEA313C	Inspect, test and troubleshoot piston engine systems and components	MEA306C
MEA314C	Inspect, test and troubleshoot gas turbine engine systems and components	MEA306C
MEA315C	Inspect, test and troubleshoot propeller systems and components	MEA307C
MEA316C	Inspect, test and troubleshoot rotary wing rotor and control systems and components	MEA308C
MEA317C	Remove and install pressurised aircraft structural and non-structural components	(MEA302C MEA303C)
MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	(MEA302C MEA303C MEA305C)
MEA319B	Inspect gas turbine engine systems and components	MEA306C
MEA320B	Test and troubleshoot aircraft	MEA318B

	hydro-mechanical, mechanical, gaseous and landing gear systems and components	
MEA321B	Test and troubleshoot aircraft fixed wing flight control systems and components	MEA318B
MEA322B	Test and troubleshoot gas turbine engine systems and components	MEA319B
MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance	None
MEA325B	Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications	None
MEA327B	Fabricate and/or repair aircraft mechanical components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA328C	Maintain and/or repair aircraft mechanical components or parts	(MEA302C MEA303C)
MEA329B	Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA330B	Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA331B	Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA332B	Dismantle, inspect, maintain and assemble aircraft mechanical components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA333B	Dismantle, inspect, maintain and assemble aircraft piston engine components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA339B	Inspect, repair and maintain aircraft structures	(MEA304C)

		OR MEA317C)
MEA340A	Lay out and set up aircraft systems	(MEA101B MEA107B MEA109B)
MEA341A	Apply basic aircraft design characteristics	(MEA101A MEA107A MEA109A)
MEA342A	Apply basic aircraft power plant design characteristics	(MEA101B MEA107B MEA109B)
MEA343B	Remove and install avionic system components	(MEA227C OR MEA211C)
MEA344A	Remove and install aircraft components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA345A	Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA346A	Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA347A	Perform scheduled line maintenance activities on piston engine fixed wing aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA348A	Perform scheduled line maintenance activities on piston engine rotary wing aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations	None
MEA350A	Select and test aeronautical engineering materials	None
MEA351A	Maintain airframe systems of basic light fixed wing aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA352A	Maintain basic rotary wing aircraft systems	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA353A	Maintain basic light aircraft engines and propellers	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)

MEA354A	Maintain light aircraft pneumatic systems	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA355A	Maintain light aircraft air cycle air conditioning systems	(MEA201B MEA246C)
MEA356A	Maintain light piston engine aircraft pressurisation systems	(MEA201B MEA246C)
MEA357A	Inspect, test and repair aircraft fabric surfaces	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA358A	Re-cover aircraft fabric surfaces	None
MEA359A	Inspect and repair aircraft wooden structures	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA360A	Maintain aircraft diesel engines	None
MEA361A	Maintain aircraft two stroke petrol engines	None
MEA362A	Maintain aircraft vapour cycle air conditioning systems	(MEA201B MEA246C)
MEA363A	Inspect, repair and maintain structures and related components of non-pressurised small aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA364A	Maintain and/or repair small aircraft mechanical components or parts	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications	None
MEA366A	Perform borescope inspections	(MEA322B OR MEA313C OR MEA314C OR MEA387A OR MEA388A)
MEA380A	Repair and/or overhaul aircraft hydraulic system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA381A	Repair and/or overhaul aircraft pneumatic system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA382A	Repair and/or overhaul aircraft fuel system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)

MEA383A	Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA384A	Repair and/or overhaul gas turbine engine combustion section components and/or modules	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA385A	Repair and/or overhaul gas turbine engine turbine and exhaust section components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA386A	Repair and/or overhaul gas turbine engine ancillary section components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA387A	Test gas turbine engines and engine modules after overhaul or repair	(MEA383A MEA384A MEA385A MEA386A)
MEA388A	Repair and/or overhaul piston engines	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA389A	Repair and/or overhaul propellers	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA390A	Repair and/or overhaul rotary wing dynamic components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA391A	Repair and/or overhaul aircraft mechanical system components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA401B	Inspect aircraft structures	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA402B	Fabricate aircraft structural components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA403B	Repair/modify aircraft structure	(MEA401B MEA402B)
MEA404B	Disassemble and reassemble aircraft structure for major repair or modification	MEA403B
MEA405B	Repair/modify aircraft composite material structure/components	MEA401B
MEA406B	Repair/modify aircraft non-primary structural sheetmetal components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)

MEA407B	Repair/modify aircraft non-primary structural non-metallic components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA410B	Maintain aircraft structure/components	MEA401B
MEA411A	Remove surface coatings from aircraft or aircraft components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA412A	Pre-treat aluminium alloy surfaces	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA413A	Seal aircraft and aircraft component structural seams	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA414A	Remove light corrosion from aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA415A	Paint aircraft surfaces	(AURV329603DA AURV229749A MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA416A	Apply aircraft identification markings, graphics and decals	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA417A	Apply specialty coatings to aircraft	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA418A	Perform basic repair of aircraft internal fittings during line maintenance	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA419A	Inspect and repair/modify aircraft cabin/cockpit non-primary structure components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA501A	Maintain and fit anti-G suits	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B LMFSF2002B MEA511A)
MEA502A	Maintain and fit helmets	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA503A	Maintain and fit immersion suits	(LMTTF2008A MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA504A	Maintain and fit oxygen masks	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)

MEA505A	Maintain and pack parachutes	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B LMFSF2002B MEA511A)
MEA506A	Maintain and pack survival inflatable life rafts and escape slides	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA507A	Maintain, pack and fit survival inflatable buoyancy vests	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA508A	Maintain, install and remove restraint systems	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B LMFSF2002B MEA511A)
MEA509A	Manufacture, repair and alter aircraft related fabric components	(MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B LMFSF2002B MEA511A)
MEA510A	Maintain seat and pod electrical and electronic systems	None
MEA511A	Operate and maintain sewing machines and overlockers	None
MEA601A	Maintain aircraft egress systems	(PUADEFEO101 MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA602A	Remove and install aircraft stores management system components	(PUADEFEO101 MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA603A	Remove and install aircraft stores suspension systems and components	(PUADEFEO101 MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B)
MEA604A	Inspect, test and troubleshoot aircraft stores management systems and components	MEA602A
MEA605A	Inspect, test and troubleshoot aircraft stores suspension systems and components	MEA603A

Imported units of competency in this Training Package

Code	Title	Origin
AURV229749A	Prepare spray painting materials and equipment	AUR05
AURV231208A	Carry out trimming of vehicle components	AUR05
AURV231268A	Select and apply trim/fabric materials and determine attachment methods	AUR05
AURV231368A	Select and apply trim/fabric adhesives	AUR05
AURV329603DA	Apply air dry and polyurethane enamel refinishing materials	AUR05
BSBMGT503A	Prepare budgets and financial plans	BSB01
BSBMGT504A	Manage budgets and financial plans	BSB01
LMFSF2001B	Cut single layer fabrics	LMF02
LMFSF2002B	Machine sew materials	LMF02
LMFUP3012B	Apply marine sewing and installation techniques	LMF02
LMTTF2008A	Use adhesives	LMT07
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	MEM05
MEM12001B	Use comparison and basic measuring devices	MEM05
MEM30007A	Select common engineering materials	MEM05
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	MEM05
MSAENV272B	Participate in environmentally sustainable work practices	MSA07
MSAENV472B	Implement and monitor environmentally sustainable work practices	MSA07
MSAENV672B	Develop workplace policy and procedures for environmental sustainability	MSA07
PSPMNGT610A	Manage public sector financial resources	PSP04
PUADEFEO101B	Work safely with explosive ordnance	TBA

PUADEFEO501B	Conduct explosive ordnance inspection	TBA

Mapping to Previous Training Package

Mapping to Previous Training Package

Mapping of Units of Competency

MEA07v3 - Corrections to errors in unit titles on NTIS

Note that A or B versions have been corrected where required.

	Error		Correct title
MEA124B	Coordinate change programs	MEA124B	Coordinate change programs in the aviation maintenance environment
MEA125B	Develop personnel	MEA125B	Develop aviation maintenance personnel
MEA131B	Manage the custody of aircraft, aeronautical product and support equipment	MEA131B	Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment
MEA136A	Assess aviation maintenance spares and manage repairable items	MEA136A	Assess aviation maintenance spares and manage repairable items
MEA137A	Write aviation technical publications	MEA137A	Write aviation technical publications
MEA138A	Perform aviation technical publication management activities	MEA138A	Perform aviation technical publication management activities
MEA143B	Develop and manage civil aircraft maintenance error management programs	MEA143A	Develop and manage maintenance error management programs
MEA233B	Inspect, test and troubleshoot inertial	MEA233B	Inspect, test and troubleshoot aircraft inertial navigation

	navigation and reference systems and components		and reference systems and components

Mapping of MEA07v3 to MEA07v2, with prerequisite requirements

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
Package-specific units			
MEA101B Interpret occupational health and safety practices in aviation maintenance		Unchanged	Nil
MEA103B Plan and organise aviation maintenance work activities		Unchanged	MEA101B, 105B, 107B, 108B
MEA105B Apply quality standards applicable to aviation maintenance processes		Unchanged	MEA101B, 107B
MEA107B Interpret and use aviation maintenance industry manuals and specifications		Unchanged	Nil
MEA108B Complete aviation maintenance industry documentation		Unchanged	MEA105B
MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance		Unchanged	MEA105B, 108B
MEA111B Perform administrative processes to prepare for certification of civil aircraft maintenance		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA112B Plan and implement civil aircraft maintenance activities		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence
MEA113C Supervise civil aircraft maintenance activities and manage human resources in the workplace	MEA113B Supervise civil aircraft maintenance activities and manage human resources in the workplace	Reference to MEM17001B and 17002B deleted	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence
MEA114A Certify aeronautical product maintenance		Unchanged	Nil
MEA115A Plan and implement aeronautical product maintenance activities		Unchanged	Nil
MEA116B Apply occupational health and safety procedures at supervisor level in aviation maintenance	MEA116A Apply occupational health and safety procedures at supervisor level in aviation maintenance	Descriptor and Range Statement revised to also include Certificate IV training pathways that lead to employment as a supervisor – units are equivalent	Nil
MEA117A Apply self in the aviation maintenance environment		Unchanged	Nil
MEA118A Conduct self in the aviation maintenance environment		Unchanged	Nil

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA119A Perform administrative processes to prepare for certification of civil aircraft A level line maintenance		Unchanged	All Certificate II in Aircraft Line Maintenance units applicable to the CASA A Licence
MEA120B Manage an aviation maintenance quality system	MEA120A Manage an aviation maintenance quality system	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA121B Manage aircraft/aeronautical product configuration	MEA121A Manage aircraft/aeronautical product configuration	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA122B Manage aircraft/equipment system performance testing	MEA122A Manage aircraft/equipment system performance testing	References to Civil Aviation Safety Regulations updated Units are equivalent	MEA126B
MEA123B Manage aviation maintenance work environment policy and practices	MEA123A Manage aviation maintenance work environment policy and practices	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA124B Coordinate change programs in the aviation maintenance environment	MEA124A Coordinate change programs in the	References to Civil Aviation Safety	Nil

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
	aviation maintenance environment	Regulations updated Units are equivalent	
MEA125B Develop aviation maintenance personnel	MEA125A Develop aviation maintenance personnel	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA126B Manage aircraft maintenance activities	MEA126A Manage aircraft maintenance activities	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA127B Provide technical advice in the maintenance and management of aircraft and aeronautical product	MEA127A Provide technical advice in the maintenance and management of aircraft and aeronautical product	References to Civil Aviation Safety Regulations updated Units are equivalent	MEA349A, MEA350A Or MEA272A, MEA273A
MEA128B Provide engineering advice in the modification, maintenance and management of aircraft systems	MEA128A Provide engineering advice in the modification, maintenance and management of aircraft systems	Engineering knowledge requirements expanded Units are equivalent	MEA349A, MEA350A Or MEA272A, MEA273A
MEA129A Investigate technical aspects of aviation occurrences		Unchanged	Nil
MEA130A Manage deployed/detached aviation		Unchanged	Nil

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
maintenance activities			
MEA131B Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment	MEA131A Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA132A Manage budgetary resources in the aviation maintenance environment		Unchanged	Nil
MEA133B Communicate aviation technical and maintenance management knowledge	MEA133A Communicate aviation technical and maintenance management knowledge	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA134B Establish, maintain and evaluate the organisation's occupational health and safety system	MEA134A Establish, maintain and evaluate the organisation's occupational health and safety system	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA135A Use computers in aviation maintenance-related integrated logistic support activities		Unchanged	Nil
MEA136A Assess aviation maintenance spares and manage repairable items		Unchanged	MEA135A
MEA137A Write aviation technical publications		Unchanged	MEA135A

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA138B Perform aviation technical publication management activities	MEA138A Perform aviation technical publication management activities	References to Civil Aviation Safety Regulations updated Units are equivalent	MEA137A
MEA139A Perform aviation maintenance – related integrated logistic support management activities		Unchanged	Nil
MEA140A Supervise aviation maintenance teams and perform maintenance quality inspections		Unchanged	Maintenance Quality Inspector or Independent Inspector in the ADF Regulatory environment
MEA141B Manage risk in aviation maintenance	MEA141A Manage risk in aviation maintenance	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA142B Manage self in the aviation maintenance environment	MEA142A Manage self in the aviation maintenance environment	References to Civil Aviation Safety Regulations updated Units are equivalent	Nil
MEA143B Develop and manage maintenance error management programs	MEA143A Develop and manage maintenance error management programs	References to Civil Aviation Safety Regulations updated	Nil

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		Units are equivalent	
MEA145A Conversion from allied trades for employment in aviation maintenance workshops		New Unit	MEA108B
MEA201B Remove and install miscellaneous aircraft electrical hardware/components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA202C Remove and install basic aircraft electrical system components	MEA202B Remove and install basic aircraft electrical system components	Range Statement and knowledge required revised to include gas turbine ignition and starting systems	MEA201B
MEA203C Remove and install advanced aircraft electrical system components	MEA203B Remove and install advanced aircraft electrical system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA201B
MEA204C Remove and install basic aircraft instrument system components	MEA204B Remove and install basic aircraft instrument system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA201B
MEA205C Remove and install advanced aircraft instrument system	MEA205B Remove and install advanced aircraft instrument	Knowledge statements expanded to improve usability	MEA201B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
components	system components	in General Aviation Units are equivalent	
MEA206C Remove and install aircraft basic radio communication and navigation system components	MEA206B Remove and install aircraft basic radio communication and navigation system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA201B
MEA207C Remove and install aircraft electronic system components	MEA207B Remove and install aircraft electronic system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA201B
MEA208C Remove and install aircraft pressurisation control system components	MEA208B Remove and install aircraft pressurisation control system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA201B
MEA209C Remove and install aircraft oxygen system components	MEA209B Remove and install aircraft oxygen system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA210C Inspect, test and troubleshoot basic aircraft electrical systems and components	MEA210B Inspect, test and troubleshoot basic aircraft electrical systems and components	Range Statement and knowledge required revised to include gas turbine ignition and starting systems	MEA202C, 246C
MEA211C Inspect, test and troubleshoot advanced aircraft electrical systems and components	MEA211B Inspect, test and troubleshoot advanced aircraft electrical systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA203C, 246C
MEA212C Inspect, test and troubleshoot basic aircraft instrument systems and components	MEA212B Inspect, test and troubleshoot basic aircraft instrument systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA204C, 246C
MEA213C Inspect, test and troubleshoot advanced aircraft instrument systems	MEA213B Inspect, test and troubleshoot advanced aircraft instrument systems	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA205C, 246C
MEA214C Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components	MEA214B Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and	Knowledge statements expanded to improve usability in General Aviation	MEA206C, 246C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
	components	Units are equivalent	
MEA215C Inspect, test and troubleshoot advanced aircraft communications systems and components	MEA215B Inspect, test and troubleshoot advanced aircraft communications systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA206C, 246C
MEA216C Inspect, test and troubleshoot instrument landing systems and components	MEA216B Inspect, test and troubleshoot instrument landing systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA206C, 207C, 246C
MEA217C Inspect, test and troubleshoot fixed wing autopilot systems and components	MEA217B Inspect, test and troubleshoot fixed wing autopilot systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA207C, 246C
MEA218C Inspect, test and troubleshoot rotary wing autopilot systems and components	MEA218B Inspect, test and troubleshoot rotary wing autopilot systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA207C, 246C
MEA219C Inspect, test and troubleshoot aircraft pressurisation control systems	MEA219B Inspect, test and troubleshoot aircraft	Knowledge statements expanded to	MEA208C, 246C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
and components	pressurisation control systems and components	improve usability in General Aviation Units are equivalent	
MEA220C Inspect, test and troubleshoot aircraft primary radar systems and components	MEA220B Inspect, test and troubleshoot aircraft primary radar systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA207C, 246C
MEA221C Inspect, test and troubleshoot aircraft secondary radar systems and components	MEA221B Inspect, test and troubleshoot aircraft secondary radar systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA207C, 246C
MEA222C Inspect, test and troubleshoot aircraft oxygen systems and components	MEA222B Inspect, test and troubleshoot aircraft oxygen systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA209C
MEA223C Inspect aircraft electrical systems and components		Unchanged	MEA203C, 246C
MEA224B Inspect aircraft instrument systems and components		Unchanged	MEA205C, 246C
MEA225B Inspect fixed wing		Unchanged	MEA207C, 246C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
aircraft automatic flight control systems and components			
MEA226C Inspect aircraft electronic systems and components		Unchanged	MEA207C, 246C
MEA227C Test and troubleshoot aircraft electrical systems and components		Unchanged	MEA223C, 246C
MEA228C Test and troubleshoot aircraft instrument systems and components		Unchanged	MEA224B, 226C
MEA229C Test and troubleshoot aircraft radio frequency navigation and communications systems and components		Unchanged	MEA226C, 246C
MEA230B Test and troubleshoot fixed wing aircraft automatic flight control systems and components		Unchanged	MEA225B
MEA231B Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components		Unchanged	MEA207C, 246C
MEA232B Test and troubleshoot aircraft pulse systems and components		Unchanged	MEA226C
MEA233C Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components	MEA233B Inspect, test and troubleshoot aircraft inertial navigation and reference systems	Knowledge statements expanded to improve usability in General	MEA207C, 246C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
	and components	Aviation	
MEA234C Inspect, test and troubleshoot aircraft global navigation systems and components	MEA234B Inspect, test and troubleshoot aircraft global navigation systems and components	Knowledge statements expanded to improve usability in General Aviation	MEA206C, 207C, 246C
MEA235B Perform advanced troubleshooting in aircraft avionic maintenance		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B2 Licence
MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware/components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA239B Fabricate aircraft electrical looms and harnesses		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 240B
MEA240B Use electrical test equipment to perform basic electrical tests		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA241B Perform aircraft weight and balance calculations as a result of modifications		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B2 Licence
MEA246C Fabricate and/or repair aircraft electrical hardware or parts	MEA246B Fabricate and/or repair aircraft electrical hardware or parts	Knowledge statements expanded to improve usability in General Aviation	MEA201B, 260B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		Units are equivalent	
MEA252B Test, align and troubleshoot aircraft synchro and servo system components		Unchanged	MEA201B, 260B, 261C
MEA260B Use electrical test equipment		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA261C Use electronic test equipment	MEA261B Use electronic test equipment	Range Statement revised to improve industry application of unit Units are equivalent	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA262B Modify/repair aircraft component single layer printed circuit boards		Unchanged	MEA260B, 261B
MEA263B Modify/repair aircraft component multi-layer printed circuit boards		Unchanged	MEA260B, 261B
MEA264A Remove and install aircraft electrical/avionic components during line maintenance		Unchanged	MEA260B, 261B
MEA265A Remove and install general aircraft electrical hardware		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA270A Lay out avionic systems		Unchanged	MEA101B, 107B, 109B
MEA271A Lay out avionic flight management systems		Unchanged	MEA270B
MEA272A Apply basic scientific principles and		Unchanged	

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
techniques in avionic engineering situations			
MEA273A Select and test avionic engineering materials		Unchanged	
MEA274A Maintain basic light aircraft electrical systems and components		New Unit	MEA246C
MEA275A Maintain basic light aircraft instrument systems and components		New Unit	MEA246C
MEA276A Maintain basic aircraft communication and radio navigation systems and components		New Unit	MEA246C
MEA277A Maintain twin engine aircraft electrical systems and components		New Unit	MEA207C, 246C
MEA278A Inspect, test and troubleshoot instrument display systems and components		New Unit	MEA207C, 246C
MEA279A Inspect, test and troubleshoot full authority digital engine control systems		New Unit	MEA207C, 246C
MEA280A Inspect, test and troubleshoot flight management systems and components		New Unit	MEA207C, 246C
MEA281A Maintain light aircraft AC powered instrument systems and components		New Unit	MEA246C
MEA282A Repair or overhaul aircraft pulse system		New Unit	MEA260B, 261C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
components			
MEA283A Repair or overhaul aircraft display, control and distribution system components		New Unit	MEA260B, 261C
MEA284A Repair or overhaul aircraft instrument system components		New Unit	MEA260B, 261C
MEA285A Repair or overhaul aircraft radio frequency communication and navigation system components		New Unit	MEA260B, 261C
MEA286A Repair or overhaul aircraft electrical/electro-mechanical components		New Unit	MEA260B, 261C
MEA287A Repair or overhaul aircraft oxygen system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA288A Repair or overhaul aircraft audio and visual systems and reproducers		New Unit	MEA260B, 261C
MEA289A Maintain basic light aircraft avionic systems and components		New Unit	MEA246C
MEA290A Fit avionic modification sheetmetal components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA291A Inspect, test and troubleshoot fixed wing single axis autopilot systems and components		New Unit	MEA207C, 246C
MEA301C Perform aircraft	MEA301B Perform	Knowledge	MEA101B, 103B,

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
flight servicing	aircraft flight servicing	statements expanded to improve usability in General Aviation Units are equivalent	105B, 107B, 108B, 109B
MEA302C Remove and install aircraft hydro-mechanical and landing gear system components	MEA302B Remove and install aircraft hydro-mechanical and landing gear system components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA303C Remove and install aircraft pneumatic system components	MEA303B Remove and install aircraft pneumatic system components	Range Statement and Knowledge requirements revised to include halon fire extinguisher environmental requirements	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA304C Remove and install non-pressurised aircraft structural and non-structural components	MEA304B Remove and install non-pressurised aircraft structural and non-structural components	Knowledge statements expanded to improve usability in General Aviation	MEA302C
MEA305C Remove and install aircraft fixed wing flight control system components	MEA305B Remove and install aircraft fixed wing flight control system components	Knowledge statements expanded to improve usability in General Aviation	MEA302C
MEA306C Remove and install engines and engine	MEA306B Remove and install engines and engine system	Knowledge statements expanded to	MEA302C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
system components	components	improve usability in General Aviation Units are equivalent	
MEA307C Remove and install propeller systems and components	MEA307B Remove and install propeller systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA308C Remove and install rotary wing rotor and flight control system components	MEA308B Remove and install rotary wing rotor and flight control system components	Knowledge statements expanded to improve usability in General Aviation	MEA302C
MEA309C Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	MEA309B Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	Knowledge statements expanded to improve usability in General Aviation	MEA302C
MEA310C Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA310B Inspect, test and troubleshoot aircraft pneumatic systems and components	Knowledge requirements revised to include halon fire extinguisher requirements Units are equivalent	MEA303C
MEA311C Inspect and repair/modify aircraft structures	MEA311B Inspect and repair/modify aircraft structures	Knowledge statements expanded to	MEA304C or 317C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		improve usability in General Aviation Units are equivalent	
MEA312C Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	MEA312B Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA305C
MEA313C Inspect, test and troubleshoot piston engine systems and components	MEA313B Inspect, test and troubleshoot piston engine systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA306C
MEA314C Inspect, test and troubleshoot gas turbine engine systems and components	MEA314B Inspect, test and troubleshoot gas turbine engine systems and components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA306C
MEA315C Inspect, test and troubleshoot propeller systems and components	MEA315B Inspect, test and troubleshoot propeller systems and components	Knowledge statements expanded to improve usability in General Aviation	MEA307C
MEA316C Inspect, test and troubleshoot rotary wing rotor	MEA316B Inspect, test and troubleshoot	Knowledge statements	MEA308C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
and control systems and components	rotary wing rotor and control systems and components	expanded to improve usability in General Aviation Units are equivalent	
MEA317C Remove and install pressurised aircraft structural and non-structural components	MEA317B Remove and install pressurised aircraft structural and non-structural components	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA302C and 303C
MEA318B Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components		Unchanged	MEA302C, 303C and 305C
MEA319B Inspect gas turbine engine systems and components		Unchanged	MEA306C
MEA320B Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components		Unchanged	MEA318B
MEA321B Test and troubleshoot aircraft fixed wing flight control systems and components		Unchanged	MEA318B
MEA322B Test and troubleshoot gas turbine engine systems and components		Unchanged	MEA319B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA323B Perform advanced troubleshooting in aircraft mechanical maintenance		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 Licence
MEA325B Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 Licence
MEA327B Fabricate and/or repair aircraft mechanical components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA328C Maintain and/or repair aircraft mechanical components or parts	MEA328B Maintain and/or repair aircraft mechanical components or parts	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA302C and 303C
MEA329B Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA330B Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA331B Dismantle, inspect, maintain and assemble aircraft gas turbine		Unchanged	MEA101B, 103B, 105B, 107B, 108B,

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
engine components or parts			109B
MEA332B Dismantle, inspect, maintain and assemble aircraft mechanical components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA333B Dismantle, inspect, maintain and assemble aircraft piston engine components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA339B Inspect, repair and maintain aircraft structures	MEA339A Inspect, repair and maintain aircraft structures	Knowledge statements expanded to improve usability in General Aviation Units are equivalent	MEA304C or 317C
MEA340A Lay out and set up aircraft systems		Unchanged	MEA101B, 107B, 109B
MEA341A Apply basic aircraft design characteristics		Unchanged	MEA101B, 107B, 109B
MEA342A Apply basic aircraft power plant design characteristics		Unchanged	MEA101B, 107B, 109B
MEA343B Remove and install avionic system components		Unchanged	MEA211C OR 227C
MEA344A Remove and install aircraft components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA345A Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA346A Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA347A Perform scheduled line maintenance activities on piston engine fixed wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA348A Perform scheduled line maintenance activities on piston engine rotary wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA349A Apply basic scientific principles and techniques in aeronautical engineering situations		Unchanged	
MEA350A Select and test avionic engineering materials		Unchanged	
MEA351A Maintain airframe systems of basic light fixed wing aircraft		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA352A Maintain basic rotary wing aircraft systems		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA353A Maintain basic light aircraft engines and propellers		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA354A Maintain light aircraft pneumatic systems		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA355A Maintain light aircraft air cycle air conditioning systems		New Unit	MEA201B, 246C

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA356A Maintain light piston engine aircraft pressurisation systems		New Unit	MEA201B, 246C
MEA357A Inspect, test and repair aircraft fabric surfaces		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA358A Re-cover aircraft fabric surfaces		New Unit	MEA357A
MEA359A Inspect and repair aircraft wooden structures		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA360A Maintain aircraft diesel engines		New Unit	MEA353A
MEA361A Maintain aircraft two stroke petrol engines		New Unit	MEA353A
MEA362A Maintain aircraft vapour cycle air conditioning systems		New Unit	MEA201B, 246C
MEA363A Inspect, repair and maintain structures and related components of non-pressurised small aircraft		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA364A Maintain and/or repair small aircraft mechanical components or parts		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA365A Assess structural repair/modification requirements and evaluate structural repairs and modifications		New Unit (replaces MEA324B)	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA366A Perform borescope inspections		New Unit	One of MEA313C, 314C, 322B, 387B
MEA380A Repair and/or overhaul aircraft hydraulic system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA381A Repair and/or overhaul aircraft pneumatic system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA382A Repair and/or overhaul aircraft fuel system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA383A Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA384A Repair and/or overhaul gas turbine engine combustion section components and/or modules		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA385A Repair and/or overhaul gas turbine engine turbine and exhaust section components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA386A Repair and/or overhaul gas turbine engine ancillary section components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA387A Test gas turbine engines and engine modules after overhaul or repair		New Unit	MEA383A, 384A, 385A, 386A
MEA388A Repair and/or overhaul piston engines		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA389A Repair and/or		New Unit	MEA101B, 103B, 105B, 107B, 108B,

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
overhaul propellers			109B
MEA390A Repair and/or overhaul rotary wing dynamic components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA391A Repair and/or overhaul aircraft mechanical system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA401B Inspect aircraft structures		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA402B Fabricate aircraft structural components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA403B Repair/modify aircraft structure		Unchanged	MEA401B, 402B
MEA404B Disassemble and reassemble aircraft structure for major repair or modification		Unchanged	MEA403B
MEA405B Repair/modify aircraft composite material structure/components		Unchanged	MEA401B
MEA406B Repair/modify aircraft non-primary structural sheetmetal components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA407B Repair/modify aircraft non-primary structural non-metallic components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA410B Maintain aircraft structure/components		Unchanged	MEA401B
MEA411A Remove surface coatings from aircraft or aircraft components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA412A Pre-treat aluminium alloy surfaces		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA413A Seal aircraft and aircraft component structural seams		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA414A Remove light corrosion from aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA415A Paint aircraft surfaces		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, AURV229749A, AURV329603DA
MEA416A Apply aircraft identification markings, graphics and decals		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA417A Apply specialty coatings to aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA418A Perform basic repair of aircraft internal fittings during line maintenance		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA419A Inspect and repair/modify aircraft cabin/cockpit non-primary structure components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA501A Maintain and fit anti-G suits		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMSF2002B, MEA118A
MEA502A Maintain and fit		Unchanged	MEA101B, 103B,

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
helmets			105B, 107B, 108B, 109B, MEA118A, 240B
MEA503A Maintain and fit immersion suits		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, LMTTF2008A, MEA118A
MEA504A Maintain and fit oxygen masks		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A, 240B
MEA505A Maintain and pack parachutes		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMFSF2002B, MEA118A
MEA506A Maintain and pack survival inflatable life rafts and escape slides		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A
MEA507A Maintain, pack and fit survival inflatable buoyancy vests		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A
MEA508A Maintain, install and remove restraint systems		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMFSF2002B, MEA118A
MEA509A Manufacture, repair and alter aircraft related fabric components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMSF2002B, MEA118A
MEA510A Maintain seat and pod electrical and electronic		Unchanged	MEA240B

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
systems			
MEA511A Operate and maintain sewing machines and overlockers		Unchanged	
MEA601A Maintain aircraft egress systems		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B, PUADEFEO101B
MEA602A Remove and install aircraft stores management system components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B, PUADEFEO101B
MEA603A Remove and install aircraft stores suspension systems and components		New Unit	MEA101B, 103B, 105B, 107B, 108B, 109B, PUADEFEO101B
MEA604A Inspect, test and troubleshoot aircraft stores management systems and components		New Unit	MEA602A
MEA605A Inspect, test and troubleshoot aircraft stores suspension systems and components		New Unit	MEA603A
Imported Units			
MEM08013B Prepare surfaces by abrasive blasting (advanced)	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM12001B Use comparison and basic measuring devices	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEM30007A Select common engineering materials	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
AURV229749A Prepare spray painting materials and equipment	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231208A Carry out trimming of vehicle components	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231268A Select and apply trim/fabric materials and determine attachment methods	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231368A Select and apply trim/fabric adhesives	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
AURV329603DA Apply air dry and polyurethane enamel refinishing material	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
BSBMGT503A Prepare budgets and financial plans	Unchanged	From Business Services Training Package – deleted from BSB07 – not contextualised	
BSBMGT504A Manage budgets and financial plans	Unchanged	From Business Services Training Package – deleted from BSB07 – not contextualised	
LMFSF2001B Cut single layer fabrics	Unchanged	From the Furnishing Training Package-current unit – not contextualised	
LMFSF2002B Machine sew materials	Unchanged	From the Furnishing Training Package-current unit – not contextualised	
LMFUP3012B Apply marine sewing and installation techniques	Unchanged	From the Furnishing Training Package-current unit – not contextualised	
LMTTF2008A Use adhesives	Unchanged	From Textiles, Clothing and	

MEA07v3 Unit Code and title	MEA07v2 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		Footwear Training Package – current unit – not contextualised	
PSPMNGT610A Manage public sector financial resources	Unchanged	From Public Sector Training Package – current unit – not contextualised	
PUADEFEO101B Work safely with explosive ordnance	Unchanged	From Public Safety Training Package – current unit – not contextualised	
PUADEFEO501B Conduct explosive ordnance inspection	Unchanged	From Public Safety Training Package – current unit – not contextualised	
MSAENV272B Participate in environmentally sustainable work practices	New in Version 3	From Manufacturing Training Package – current unit – not contextualised	
MSAENV472B Implement and monitor environmentally sustainable work practices	New in Version 3	From Manufacturing Training Package – current unit – not contextualised	
MSAENV672B Develop workplace policy and procedures for environmental sustainability	New in Version 3	From Manufacturing Training Package – current unit – not contextualised	

Units Not Carried Forward From MEA07V2 to MEA07 V3

Unit	Comment
MEA247B Repair or overhaul aircraft electrical/electro-mechanical components	Replaced by MEA288A
MEA248B Repair or overhaul aircraft instrument and display system components	Replaced by MEA283A and 284A
MEA249B Test, align and troubleshoot analogue circuitry	Incorporated in MEA285A
MEA250B Test, align and troubleshoot digital circuitry	Incorporated in MEA282A and 283A
MEA251B Repair or overhaul aircraft oxygen system components	Replaced by MEA287A
MEA258B Repair or overhaul aircraft audio and visual systems and reproducers	Replaced by MEA288A
MEA324B Perform structural repair/modification assessment and evaluation	Replaced by MEA365A
MEA334B Repair and/or overhaul aircraft hydro-mechanical systems and components	Replaced by MEA380A, 381A and 382A
MEA335B Repair and/or overhaul aircraft gas turbine engine components and/or modules	Replaced by MEA383A to 387A inclusive
MEA336B Repair and/or overhaul aircraft piston engines	Replaced by MEA388A
MEA337B Repair and/or overhaul propellers	Replaced by MEA389A
MEA338B Repair and/or overhaul rotary wing dynamic components	Replaced by MEA390A
MEA408B Inspect and repair aircraft wooden structures	Replaced by MEA359A
MEA409B Inspect, test, repair and re-cover aircraft fabric surfaces	Replaced by MEA357A and 358A
MEM17001B Assist in development and deliver training in the workplace	No longer required for MEA113C

MEM17002B Conduct workplace assessment	No longer required for MEA113C
MEM24002B Perform penetrant testing	Deleted with MEA324B
MEM24012B Apply metallurgy principles	Deleted with MEA324B

Mapping of Units of Competency in MEA07v2 to MEA07v1, with prerequisite requirements

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
Package-specific units			
MEA101B Interpret occupational health and safety practices in aviation maintenance		Unchanged	Nil
MEA103B Plan and organise aviation maintenance work activities		Unchanged	MEA101B, 105B, 107B, 108B
MEA105B Apply quality standards applicable to aviation maintenance processes		Unchanged	MEA101B, 107B
MEA107B Interpret and use aviation maintenance industry manuals and specifications		Unchanged	Nil
MEA108B Complete aviation maintenance industry documentation		Unchanged	MEA105B
MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance		Unchanged	MEA105B, 108B
MEA111B Perform administrative processes to prepare for certification of civil		Unchanged	All Certificate IV in Aeroskills (Avionics) or

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
aircraft maintenance			(Mechanical) units applicable to the CASA B1 or B2 Licence
MEA112B Plan and implement civil aircraft maintenance activities		Unchanged	MEM17001B, 17002B All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence
MEA113B Supervise civil aircraft maintenance activities and manage human resources in the workplace		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 or B2 Licence
MEA114A Certify aeronautical product maintenance	New unit	n/a	Nil
MEA115B Plan and implement aeronautical product maintenance activities		Unchanged	Nil
MEA116A Apply occupational health and safety procedures at supervisor level in aviation maintenance		Unchanged	Nil
MEA117A Apply self in the aviation maintenance environment		Unchanged	Nil
MEA118A Conduct self in the aviation maintenance environment		Unchanged	Nil

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA119A Perform administrative processes to prepare for certification of civil aircraft A level line maintenance		Unchanged	All Certificate II in Aircraft Line Maintenance units applicable to the CASA A Licence
MEA120A Manage an aviation maintenance quality system		Unchanged	Nil
MEA121A Manage aircraft/aeronautical product configuration		Unchanged	Nil
MEA122A Manage aircraft/equipment system performance testing		Unchanged	MEA126A
MEA123A Manage aviation maintenance work environment policy and practices		Unchanged	Nil
MEA124A Coordinate change programs in the aviation maintenance environment		Unchanged	Nil
MEA125A Develop aviation maintenance personnel		Unchanged	Nil
MEA126A Manage aircraft maintenance activities		Unchanged	Nil
MEA127A Provide technical advice in the maintenance and management of aircraft and aeronautical product		Unchanged	MEA349A, MEA350A Or MEA272A, MEA273A
MEA128A Provide engineering advice in the modification, maintenance and management of aircraft systems		Unchanged	MEA349A, MEA350A Or MEA272A,

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
			MEA273A
MEA129A Investigate technical aspects of aviation occurrences		Unchanged	Nil
MEA130A Manage deployed/detached aviation maintenance activities		Unchanged	Nil
MEA131A Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment		Unchanged	Nil
MEA132A Manage budgetary resources in the aviation maintenance environment		Unchanged	Nil
MEA133A Communicate aviation technical and maintenance management knowledge		Unchanged	Nil
MEA134A Establish, maintain and evaluate the organisation's occupational health and safety system		Unchanged	Nil
MEA135A Use computers in aviation maintenance-related integrated logistic support activities		Unchanged	Nil
MEA136A Assess aviation maintenance spares and manage repairable items		Unchanged	MEA135A
MEA137A Write aviation technical publications		Unchanged	MEA135A
MEA138A Perform aviation technical publication management activities		Unchanged	MEA137A

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA139A Perform aviation maintenance – related integrated logistic support management activities		Unchanged	Nil
MEA140A Supervise aviation maintenance teams and perform maintenance quality inspections		Unchanged	Maintenance Quality Inspector or Independent Inspector in the ADF Regulatory environment
MEA141A Manage risk in aviation maintenance		Unchanged	Nil
MEA142A Manage self in the aviation maintenance environment		Unchanged	Nil
MEA143A Develop and manage maintenance error management programs		Unchanged	Nil
MEA201B Remove and install miscellaneous aircraft electrical hardware/components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA202B Remove and install basic aircraft electrical system components		Unchanged	MEA201B
MEA203B Remove and install advanced aircraft electrical system components		Unchanged	MEA201B
MEA204B Remove and install basic aircraft instrument system components		Unchanged	MEA201B
MEA205B Remove and install advanced aircraft instrument system components		Unchanged	MEA201B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA206B Remove and install aircraft basic radio communication and navigation system components		Unchanged	MEA201B
MEA207B Remove and install aircraft electronic system components		Unchanged	MEA201B
MEA208B Remove and install aircraft pressurisation control system components		Unchanged	MEA201B
MEA209B Remove and install aircraft oxygen system components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA210B Inspect, test and troubleshoot basic aircraft electrical systems and components		Unchanged	MEA202B, 246B
MEA211B Inspect, test and troubleshoot advanced aircraft electrical systems and components		Unchanged	MEA203B, 246B
MEA212B Inspect, test and troubleshoot basic aircraft instrument systems and components		Unchanged	MEA204B, 246B
MEA213B Inspect, test and troubleshoot advanced aircraft instrument systems		Unchanged	MEA205B, 246B
MEA214B Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components		Unchanged	MEA206B, 246B
MEA215B Inspect, test and troubleshoot advanced aircraft		Unchanged	MEA206B, 246B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
communications systems and components			
MEA216B Inspect, test and troubleshoot instrument landing systems and components		Unchanged	MEA206B, 207B, 246B
MEA217B Inspect, test and troubleshoot fixed wing autopilot systems and components		Unchanged	MEA207B, 246B
MEA218B Inspect, test and troubleshoot rotary wing autopilot systems and components		Unchanged	MEA207B, 246B
MEA219B Inspect, test and troubleshoot aircraft pressurisation control systems and components		Unchanged	MEA208B, 246B
MEA220B Inspect, test and troubleshoot aircraft primary radar systems and components		Unchanged	MEA207B, 246B
MEA221B Inspect, test and troubleshoot aircraft secondary radar systems and components		Unchanged	MEA207B, 246B
MEA222B Inspect, test and troubleshoot aircraft oxygen systems and components		Unchanged	MEA209B
MEA223C Inspect aircraft electrical systems and components	MEA223B Inspect aircraft electrical systems and components	Pressurisation systems added to range statement in line with CASA changes to B2 licence privileges	MEA203B, 246B
MEA224B Inspect aircraft instrument systems and		Unchanged	MEA205B, 246B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
components			
MEA225B Inspect fixed wing aircraft automatic flight control systems and components		Unchanged	MEA207B, 246B
MEA226C Inspect aircraft electronic systems and components	MEA226B Inspect aircraft electronic systems and components	Additional knowledge requirements in line with CASA changes to B2 licence knowledge requirements	MEA207B, 246B
MEA227C Test and troubleshoot aircraft electrical systems and components	MEA227B Test and troubleshoot aircraft electrical systems and components	Pressurisation systems added to range statement in line with CASA changes to B2 licence privileges	MEA223C, 246B
MEA228C Test and troubleshoot aircraft instrument systems and components	MEA228B Test and troubleshoot aircraft instrument systems and components	Additional knowledge requirements in line with CASA changes to B2 licence knowledge requirements	MEA224B, 226C
MEA229C Test and troubleshoot aircraft radio frequency navigation and communications systems and components	MEA229B Test and troubleshoot aircraft radio frequency navigation and communications systems and components	Additional knowledge requirements in line with CASA changes to B2 licence knowledge requirements	MEA226C, 246B
MEA230B Test and troubleshoot fixed wing aircraft automatic flight control systems and components		Unchanged	MEA225B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA231B Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components		Unchanged	MEA207B, 246B
MEA232B Test and troubleshoot aircraft pulse systems and components		Unchanged	MEA226C
MEA233B Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components		Unchanged	MEA207B, 246B
MEA234B Inspect, test and troubleshoot aircraft global navigation systems and components		Unchanged	MEA206B, 207B, 246B
MEA235B Perform advanced troubleshooting in aircraft avionic maintenance		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B2 Licence
MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware/components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA239B Fabricate aircraft electrical looms and harnesses		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, 240B
MEA240B Use electrical test equipment to perform basic electrical tests		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA241B Perform aircraft weight and balance calculations as a result of		Unchanged	All Certificate IV in Aeroskills (Avionics) or

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
modifications			(Mechanical) units applicable to the CASA B2 Licence
MEA246B Fabricate and/or repair aircraft electrical hardware or parts		Unchanged	MEA201B, 260B
MEA247B Repair or overhaul aircraft electrical/electro-mechanical components		Unchanged	MEA201B, 260B
MEA248B Repair or overhaul aircraft instrument and display system components		Unchanged	MEA249B, 250B, 263B
MEA249B Test, align and troubleshoot analogue circuitry		Unchanged	MEA260B, 261B
MEA250B Test, align and troubleshoot digital circuitry		Unchanged	MEA260B, 261B
MEA251B Repair or overhaul aircraft oxygen system components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA252B Test, align and troubleshoot aircraft synchro and servo system components		Unchanged	MEA201B, 260B, 261B
MEA258B Repair or overhaul aircraft audio and visual systems and reproducers		Unchanged	MEA260B, 261B
MEA260B Use electrical test equipment		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA261B Use electronic test equipment		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA262B Modify/repair		Unchanged	MEA260B, 261B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
aircraft component single layer printed circuit boards			
MEA263B Modify/repair aircraft component multi-layer printed circuit boards		Unchanged	MEA260B, 261B
MEA264A Remove and install aircraft electrical/avionic components during line maintenance		Unchanged	MEA260B, 261B
MEA265A Remove and install general aircraft electrical hardware		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA270A Lay out avionic systems		Unchanged	MEA101B, 107B, 109B
MEA271A Lay out avionic flight management systems		Unchanged	MEA270B
MEA272A Apply basic scientific principles and techniques in avionic engineering situations		Unchanged	
MEA273A Select and test avionic engineering materials		Unchanged	
MEA301B Perform aircraft flight servicing		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA302B Remove and install aircraft hydro-mechanical and landing gear system components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA303B Remove and install aircraft pneumatic system components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA304B Remove and install		Unchanged	MEA302B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
non-pressurised aircraft structural and non-structural components			
MEA305B Remove and install aircraft fixed wing flight control system components		Unchanged	MEA302B
MEA306B Remove and install engines and engine system components		Unchanged	MEA302B
MEA307B Remove and install propeller systems and components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA308B Remove and install rotary wing rotor and flight control system components		Unchanged	MEA302B
MEA309B Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components		Unchanged	MEA302B
MEA310B Inspect, test and troubleshoot aircraft pneumatic systems and components		Unchanged	MEA303B
MEA311B Inspect and repair/modify aircraft structures		Unchanged	MEA304B or 317B
MEA312B Inspect, test and troubleshoot aircraft fixed wing flight control systems and components		Unchanged	MEA305B
MEA313B Inspect, test and troubleshoot piston engine systems and components		Unchanged	MEA306B
MEA314B Inspect, test and troubleshoot gas turbine engine		Unchanged	MEA306B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
systems and components			
MEA315B Inspect, test and troubleshoot propeller systems and components		Unchanged	MEA307B
MEA316B Inspect, test and troubleshoot rotary wing rotor and control systems and components		Unchanged	MEA308B
MEA317B Remove and install pressurised aircraft structural and non-structural components		Unchanged	MEA302B and 303B
MEA318B Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components		Unchanged	MEA302B, 303B and 305B
MEA319B Inspect gas turbine engine systems and components		Unchanged	MEA306B
MEA320B Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components		Unchanged	MEA318B
MEA321B Test and troubleshoot aircraft fixed wing flight control systems and components		Unchanged	MEA318B
MEA322B Test and troubleshoot gas turbine engine systems and components		Unchanged	MEA319B
MEA323B Perform advanced troubleshooting in aircraft mechanical maintenance		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
			CASA B1 Licence
MEA324B Perform structural repair/modification assessment and evaluation		Unchanged	MEM24002B All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 Licence
MEA325C Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications		Unchanged	All Certificate IV in Aeroskills (Avionics) or (Mechanical) units applicable to the CASA B1 Licence
MEA327B Fabricate and/or repair aircraft mechanical components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA328B Maintain and/or repair aircraft mechanical components or parts		Unchanged	MEA302B and 303B
MEA329B Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA330B Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA331B Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA332B Dismantle, inspect, maintain and assemble aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B,

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
mechanical components or parts			109B
MEA333B Dismantle, inspect, maintain and assemble aircraft piston engine components or parts		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA334B Repair and/or overhaul aircraft hydro-mechanical systems and components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA335B Repair and/or overhaul aircraft gas turbine engine components and/or modules		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA336B Repair and/or overhaul aircraft piston engines		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA337B Repair and/or overhaul propellers		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA338B Repair and/or overhaul rotary wing dynamic components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA339A Inspect, repair and maintain aircraft structures		Unchanged	MEA304B or 317B
MEA340A Lay out and set up aircraft systems		Unchanged	MEA101B, 107B, 109B
MEA341A Apply basic aircraft design characteristics		Unchanged	MEA101B, 107B, 109B
MEA342A Apply basic aircraft power plant design characteristics		Unchanged	MEA101B, 107B, 109B
MEA343B Remove and install	MEA343A	Additional	MEA211B OR

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
avionic system components	Remove and install avionic system components	knowledge requirements in line with CASA changes to B1 licence knowledge requirements and additions to range statement	227C
MEA344A Remove and install aircraft components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA345A Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA346A Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA347A Perform scheduled line maintenance activities on piston engine fixed wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA348A Perform scheduled line maintenance activities on piston engine rotary wing aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA349A Apply basic scientific principles and techniques in aeronautical engineering situations		Unchanged	
MEA350A Select and test avionic engineering materials		Unchanged	
MEA401B Inspect aircraft structures		Unchanged	MEA101B, 103B, 105B, 107B, 108B,

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
			109B
MEA402B Fabricate aircraft structural components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA403B Repair/modify aircraft structure		Unchanged	MEA401B, 402B
MEA404B Disassemble and reassemble aircraft structure for major repair or modification		Unchanged	MEA403B
MEA405B Repair/modify aircraft composite material structure/components		Unchanged	MEA401B
MEA406B Repair/modify aircraft non-primary structural sheetmetal components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA407B Repair/modify aircraft non-primary structural non-metallic components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA408B Inspect and repair aircraft wooden structures		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA409B Inspect, test, repair and re-cover aircraft fabric surfaces		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA410B Maintain aircraft structure/components		Unchanged	MEA401B
MEA411A Remove surface coatings from aircraft or aircraft components		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA412A Pre-treat aluminium alloy surfaces		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA413A Seal aircraft and aircraft component structural seams		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA414A Remove light corrosion from aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA415A Paint aircraft surfaces		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B, AURV229749A, AURV329603DA
MEA416A Apply aircraft identification markings, graphics and decals		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA417A Apply specialty coatings to aircraft		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA418A Perform basic repair of aircraft internal fittings during line maintenance		Unchanged	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA419A Inspect and repair/modify aircraft cabin/cockpit non-primary structure components	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B
MEA501A Maintain and fit anti-G suits	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMSF2002B, MEA118A
MEA502A Maintain and fit helmets	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A, 240B

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
MEA503A Maintain and fit immersion suits	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, LMTTF2008A, MEA118A
MEA504A Maintain and fit oxygen masks	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A, 240B
MEA505A Maintain and pack parachutes	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMFSF2002B, MEA118A
MEA506A Maintain and pack survival inflatable life rafts and escape slides	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A
MEA507A Maintain, pack and fit survival inflatable buoyancy vests	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, MEA118A
MEA508A Maintain, install and remove restraint systems	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMFSF2002B, MEA118A
MEA509A Manufacture, repair and alter aircraft related fabric components	New unit		MEA101B, 103B, 105B, 107B, 108B, 109B, 511A, LMSF2002B, MEA118A
MEA510A Maintain seat and pod electrical and electronic systems	New unit		MEA240B
MEA511A Operate and maintain sewing machines and	New unit		Nil

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
overlockers			
Imported Units			
MEM17001B Assist in development and deliver training in the workplace	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM17002B Conduct workplace assessment	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM08013B Prepare surfaces by abrasive blasting (advanced)	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM12001B Use comparison and basic measuring devices	New in Version 2	From Metals and Engineering Training Package – current unit – not contextualised	
MEM24002B Perform penetrant testing	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	MEA109B (equivalent to MEM18001B) MEM24012B
MEM24012B Apply metallurgy principles	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
MEM30007A Select common engineering materials	Unchanged	From Metals and Engineering Training Package – current unit – not	

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		contextualised	
MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment	Unchanged	From Metals and Engineering Training Package – current unit – not contextualised	
AURV229749A Prepare spray painting materials and equipment	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231208A Carry out trimming of vehicle components	New in Version 2	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231268A Select and apply trim/fabric materials and determine attachment methods	New in Version 2	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV231368A Select and apply trim/fabric adhesives	New in Version 2	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	
AURV329603DA Apply air dry and polyurethane enamel refinishing material	Unchanged	From Automotive Industry Retail, Service and Repair Training Package – current unit – not contextualised	

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
BSBMGT503A Prepare budgets and financial plans	Unchanged	From Business Services Training Package – deleted from BSB07 – not contextualised	
BSBMGT504A Manage budgets and financial plans	Unchanged	From Business Services Training Package – deleted from BSB07 – not contextualised	
LMFSF2001B Cut single layer fabrics	New in Version 2	From the Furnishing Training Package-current unit – not contextualised	
LMFSF2002B Machine sew materials	New in Version 2	From the Furnishing Training Package-current unit – not contextualised	
LMFUP3012B Apply marine sewing and installation techniques	New in Version 2	From the Furnishing Training Package-current unit – not contextualised	
LMTTF2008A Use adhesives	New in Version 2	From Textiles, Clothing and Footwear Training Package – current unit – not contextualised	
PSPMNGT610A Manage public sector financial resources	Unchanged	From Public Sector Training Package – current	

MEA07v2 Unit Code and title	MEA07v1 Unit Code and title	Relationship to previous version	Prerequisite / Corequisite units (Check unit for details)
		unit – not contextualised	
PUADEFEO101B Work safely with explosive ordnance	New in Version 2	From Public Safety Training Package – current unit – not contextualised	
PUADEFEO501B Conduct explosive ordnance inspection	New in Version 2	From Public Safety Training Package – current unit – not contextualised	

Mapping of Units of Competency in MEA07v1 to MEA97v4

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Revised unit	Minor amendments to skills and knowledge to meet NOHSC requirements in Generic Unit A – equivalent to MEA101A
MEA103B	Plan and organise aviation maintenance work activities	Revised unit	Minor amendments to skills and knowledge to align with CASA licensing syllabus and to improve environment protection coverage – equivalent to MEA103A
MEA105B	Apply quality standards applicable to aviation maintenance processes	Revised unit	Changes to wording and layout associated with reformatting – equivalent to

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			MEA105A
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Revised unit	Minor wording change in range statement and reformatting changes – equivalent to MEA107A
MEA108B	Complete aviation maintenance industry documentation	Revised unit	Minor wording change in range statement and reformatting changes – equivalent to MEA108A
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	Revised unit	Additional skill and knowledge requirements and expansion of range statement to align with CASA licensing syllabus – equivalent to MEA109A
MEA111B	Perform administrative processes to prepare for certification of civil aircraft maintenance	Revised unit	Amended to align with proposed CASA regulations relating to the B1 and B2 licences – equivalent to MEA111A
MEA112B	Plan and implement civil aircraft maintenance activities	Revised unit	Descriptor amended to align with proposed CASA regulations relating to the B1 and B2 licences – equivalent to MEA112A
MEA113B	Supervise civil aircraft maintenance activities and manage human resources in the workplace	Revised unit	Amended to align with proposed CASA regulations relating to the B1 and B2 licences – equivalent to MEA113A
MEA115B	Plan and implement aeronautical	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	product maintenance activities		
MEA116A	Apply occupational health and safety procedures at supervisor level in aviation maintenance	New unit	
MEA117A	Apply self in the aviation maintenance environment	New unit	
MEA118A	Conduct self in the aviation maintenance environment	New unit	
MEA119A	Perform administrative processes to prepare for certification of civil aircraft A level line maintenance	New unit	
MEA120A	Manage an aviation maintenance quality system	New unit	
MEA121A	Manage aircraft/aeronautical product configuration	New unit	
MEA122A	Manage aircraft/equipment system performance testing	New unit	
MEA123A	Manage aviation maintenance work environment policy and practices	New unit	
MEA124A	Coordinate change programs in the aviation maintenance environment	New unit	
MEA125A	Develop aviation maintenance personnel	New unit	
MEA126A	Manage aircraft maintenance activities	New unit	
MEA127A	Provide technical advice in the maintenance and management of aircraft and aeronautical product	New unit	
MEA128A	Provide engineering advice in the modification, maintenance	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	and management of aircraft systems		
MEA129A	Investigate technical aspects of aviation occurrences	New unit	
MEA130A	Manage deployed/detached aviation maintenance activities	New unit	
MEA131A	Manage the custody of aircraft, aeronautical product and support equipment	New unit	
MEA132A	Manage budgetary resources in the aviation maintenance environment	New unit	
MEA133A	Communicate aviation technical and maintenance management knowledge	New unit	
MEA134A	Establish, maintain and evaluate the organisation's occupational health and safety system	New unit	
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	New unit	
MEA136A	Assess aviation maintenance spares and manage repairable items	New unit	
MEA137A	Write aviation technical publications	New unit	
MEA138A	Perform aviation technical publication management activities	New unit	
MEA139A	Perform aviation maintenance – related integrated logistic support management activities	New unit	
MEA140A	Supervise aviation maintenance teams and perform maintenance	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	quality inspections		
MEA141A	Manage risk in aviation maintenance	New unit	
MEA142A	Manage self in the aviation maintenance environment	New unit	
MEA143A	Develop and manage maintenance error management programs	New unit	
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	Revised unit	Changes to unit descriptor and required knowledge to align with CASA licensing syllabus – equivalent to MEA201A
MEA202B	Remove and install basic aircraft electrical system components	Revised unit	Unchanged apart from layout and wording changes associated with reformatting – equivalent to MEA202A
MEA203B	Remove and install advanced aircraft electrical system components	Revised unit	Changes to unit descriptor and skills and knowledge to align with CASA licensing syllabus and to range statement to clarify coverage of the unit – equivalent to MEA203A
MEA204B	Remove and install basic aircraft instrument system components	Revised unit	Unchanged apart from wording changes associated with reformatting and equivalent to MEA204A
MEA205B	Remove and install advanced aircraft instrument system	Revised unit	Unchanged apart from wording changes associated with

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	components		reformatting and equivalent to MEA205A
MEA206B	Remove and install aircraft basic radio communication and navigation system components	Revised unit	Unchanged apart from wording changes associated with reformatting and equivalent to MEA206A
MEA207B	Remove and install aircraft electronic system components	Revised unit	Changes to required knowledge to align with CASA licensing syllabus – equivalent to MEA207A
MEA208B	Remove and install aircraft pressurisation control system components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements – equivalent to MEA208A
MEA209B	Remove and install aircraft oxygen system components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and range statement amended to better align with MEA222B – equivalent to MEA209A
MEA210B	Inspect, test and troubleshoot basic aircraft electrical systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA210A
MEA211B	Inspect, test and troubleshoot advanced aircraft electrical systems and components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and changes associated with reformatting –

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			equivalent to MEA211A
MEA212B	Inspect, test and troubleshoot basic aircraft instrument systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA212A
MEA213B	Inspect, test and troubleshoot advanced aircraft instrument systems	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA213A
MEA214B	Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components	Revised unit	Knowledge requirements amended to cover CASA licensing syllabus requirements and changes related to reformatting – equivalent to MEA214A
MEA215B	Inspect, test and troubleshoot advanced aircraft communications systems and components	Revised unit	Knowledge requirements amended to cover CASA licensing syllabus requirements and changes related to reformatting – equivalent to MEA215A
MEA216B	Inspect, test and troubleshoot instrument landing systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA216A
MEA217B	Inspect, test and troubleshoot fixed wing autopilot systems and	Revised unit	Unchanged apart from wording and layout

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	components		changes associated with reformatting – equivalent to MEA217A
MEA218B	Inspect, test and troubleshoot rotary wing autopilot systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA218A
MEA219B	Inspect, test and troubleshoot aircraft pressurisation control systems and components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and changes associated with reformatting – equivalent to MEA219A
MEA220B	Inspect, test and troubleshoot aircraft primary radar systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA220A
MEA221B	Inspect, test and troubleshoot aircraft secondary radar systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA221A
MEA222B	Inspect, test and troubleshoot aircraft oxygen systems and components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and changes associated with reformatting – equivalent to MEA222A
MEA223B	Inspect aircraft electrical systems	Revised unit	Unit descriptor amended to reflect

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	and components		CASA licensing requirements and minor change to knowledge requirements and changes associated with reformatting – equivalent to MEA223A
MEA224B	Inspect aircraft instrument systems and components	Revised unit	Amended to delete references to pressurisation control in line with CASA licensing requirements and changes associated with reformatting – equivalent to MEA224A
MEA225B	Inspect fixed wing aircraft automatic flight control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA225A
MEA226B	Inspect aircraft electronic systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA226A
MEA227B	Test and troubleshoot aircraft electrical systems and components	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and changes associated with reformatting – equivalent to MEA227A
MEA228B	Test and troubleshoot aircraft instrument systems and components	Revised unit	Amended to delete references to pressurisation control in line with CASA

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			licensing requirements and changes associated with reformatting – equivalent to MEA228A
MEA229B	Test and troubleshoot aircraft radio frequency navigation and communications systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA229A
MEA230B	Test and troubleshoot fixed wing aircraft automatic flight control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA230A
MEA231B	Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA231A
MEA232B	Test and troubleshoot aircraft pulse systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA232A
MEA233B	Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA233A
MEA234B	Inspect, test and troubleshoot aircraft global navigation systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			MEA234A
MEA235B	Perform advanced troubleshooting in aircraft avionic maintenance	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA235A
MEA238B	Perform routine removal and installation of miscellaneous aircraft electrical hardware/components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA238A
MEA239B	Fabricate aircraft electrical looms and harnesses	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA239A
MEA240B	Use electrical test equipment to perform basic electrical tests	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA240A
MEA241B	Perform aircraft weight and balance calculations as a result of modifications	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA241A
MEA246B	Fabricate and/or repair aircraft electrical hardware or parts	Revised unit	Unit descriptor amended to reflect CASA licensing requirements and changes associated with reformatting – equivalent to MEA246A

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
MEA247B	Repair or overhaul aircraft electrical/electro-mechanical components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA247A
MEA248B	Repair or overhaul aircraft instrument and display system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA248A
MEA249B	Test, align and troubleshoot analogue circuitry	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA249A
MEA250B	Test, align and troubleshoot digital circuitry	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA250A
MEA251B	Repair or overhaul aircraft oxygen system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA251A
MEA252B	Test, align and troubleshoot aircraft synchro and servo system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA252A
MEA258B	Repair or overhaul aircraft audio and visual systems and reproducers	Revised unit	Unchanged apart from wording and layout changes associated with

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			reformatting – equivalent to MEA258A
MEA260B	Use electrical test equipment	Revised unit	Descriptor amended to reflect CASA licensing requirements and changes associated with reformatting – equivalent to MEA260A
MEA261B	Use electronic test equipment	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA261A
MEA262B	Modify/repair aircraft component single layer printed circuit boards	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA262A
MEA263B	Modify/repair aircraft component multi-layer printed circuit boards	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA263A
MEA264A	Remove and install aircraft electrical/avionic components during line maintenance	New unit	
MEA265A	Remove and install general aircraft electrical hardware	New unit	
MEA270A	Lay out avionic systems	New unit	
MEA271A	Lay out avionic flight management systems	New unit	
MEA272A	Apply basic scientific principles	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	and techniques in avionic engineering situations		
MEA273A	Select and test avionic engineering materials	New unit	
MEA301B	Perform aircraft flight servicing	Revised unit	Amended to align with the CASA licensing syllabus and changes associated with reformatting – equivalent to MEA301A
MEA302B	Remove and install aircraft hydro-mechanical and landing gear system components	Revised unit	Revised layout to better align with the Log of Industrial Experience and Achievement and changes associated with reformatting – equivalent to MEA302A
MEA303B	Remove and install aircraft pneumatic system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA303A
MEA304B	Remove and install non-pressurised aircraft structural and non-structural components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA304A
MEA305B	Remove and install aircraft fixed wing flight control system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA305A
MEA306B	Remove and install engines and	Revised unit	Unchanged apart from wording and layout

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	engine system components		changes associated with reformatting – equivalent to MEA306A
MEA307B	Remove and install propeller systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA307A
MEA308B	Remove and install rotary wing rotor and flight control system components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA308A
MEA309B	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	Revised unit	Revised layout to better align with the Log of Industrial Experience and Achievement and changes associated with reformatting – equivalent to MEA309A
MEA310B	Inspect, test and troubleshoot aircraft pneumatic systems and components	Revised unit	Range statement amended and changes associated with reformatting – equivalent to MEA310A
MEA311B	Inspect and repair/modify aircraft structures	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA311A
MEA312B	Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting –

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			equivalent to MEA312A
MEA313B	Inspect, test and troubleshoot piston engine systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA313A
MEA314B	Inspect, test and troubleshoot gas turbine engine systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA314A
MEA315B	Inspect, test and troubleshoot propeller systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA315A
MEA316B	Inspect, test and troubleshoot rotary wing rotor and control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA316A
MEA317B	Remove and install pressurised aircraft structural and non-structural components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA317A
MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	Revised unit	Revised layout to better align with the Log of Industrial Experience and Achievement, amendment to knowledge requirements to align with CASA licensing

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			syllabus and changes associated with reformatting – equivalent to MEA318A
MEA319B	Inspect gas turbine engine systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA319A
MEA320B	Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	Revised unit	Revised layout to better align with the Log of Industrial Experience and Achievement and changes associated with reformatting – equivalent to MEA320A
MEA321B	Test and troubleshoot aircraft fixed wing flight control systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA321A
MEA322B	Test and troubleshoot gas turbine engine systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA322A
MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA323A
MEA324B	Perform structural repair/modification assessment	Revised unit	Unchanged apart from wording and layout changes associated with

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	and evaluation		reformatting – equivalent to MEA324A
MEA325B	Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA325A
MEA327B	Fabricate and/or repair aircraft mechanical components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA327A
MEA328B	Maintain and/or repair aircraft mechanical components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA328A
MEA329B	Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA329A
MEA330B	Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA330A
MEA331B	Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA331A

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
MEA332B	Dismantle, inspect, maintain and assemble aircraft mechanical components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA332A
MEA333B	Dismantle, inspect, maintain and assemble aircraft piston engine components or parts	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA333A
MEA334B	Repair and/or overhaul aircraft hydro-mechanical systems and components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA334A
MEA335B	Repair and/or overhaul aircraft gas turbine engine components and/or modules	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA335A
MEA336B	Repair and/or overhaul aircraft piston engines	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA336A
MEA337B	Repair and/or overhaul propellers	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA337A
MEA338B	Repair and/or overhaul rotary wing dynamic components	Revised unit	Unchanged apart from wording and layout changes associated with

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			reformatting – equivalent to MEA338A
MEA339A	Inspect, repair and maintain aircraft structures	New unit	
MEA340A	Lay out and set up aircraft systems	New unit	
MEA341A	Apply basic aircraft design characteristics	New unit	
MEA342A	Apply basic aircraft power plant design characteristics	New unit	
MEA343A	Remove and install avionic system components	New unit	Replaces MEA326A
MEA344A	Remove and install aircraft components	New unit	
MEA345A	Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft	New unit	
MEA346A	Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft	New unit	
MEA347A	Perform scheduled line maintenance activities on piston engine fixed wing aircraft	New unit	
MEA348A	Perform scheduled line maintenance activities on piston engine rotary wing aircraft	New unit	
MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations	New unit	
MEA350A	Select and test avionic engineering materials	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
MEA401B	Inspect aircraft structures	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA401A
MEA402B	Fabricate aircraft structural components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA402A
MEA403B	Repair/modify aircraft structure	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA403A
MEA404B	Disassemble and reassemble aircraft structure for major repair or modification	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA404A
MEA405B	Repair/modify aircraft composite material structure/components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA405A
MEA406B	Repair/modify aircraft non-primary structural sheetmetal components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA406A
MEA407B	Repair/modify aircraft non-primary structural non-metallic components	Revised unit	Unchanged apart from wording and layout changes associated with

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
			reformatting – equivalent to MEA407A
MEA408B	Inspect and repair aircraft wooden structures	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA408A
MEA409B	Inspect, test, repair and re-cover aircraft fabric surfaces	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA409A
MEA410B	Maintain aircraft structure/components	Revised unit	Unchanged apart from wording and layout changes associated with reformatting – equivalent to MEA410A
MEA411A	Remove surface coatings from aircraft or aircraft components	New unit	
MEA412A	Pre-treat aluminium alloy surfaces	New unit	
MEA413A	Seal aircraft and aircraft component structural seams	New unit	
MEA414A	Remove light corrosion from aircraft	New unit	
MEA415A	Paint aircraft surfaces	New unit	
MEA416A	Apply aircraft identification markings, graphics and decals	New unit	
MEA417A	Apply specialty coatings to aircraft	New unit	
MEA418A	Perform basic repair of aircraft	New unit	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
	internal fittings during line maintenance		
Imported Units of Competency			
MEM17001B	Assist in development and deliver training in the workplace	New to this Training Package	
MEM17002B	Conduct workplace assessment	New to this Training Package	
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	New to this Training Package	
MEM24002B	Perform penetrant testing	New to this Training Package	
MEM24012B	Apply metallurgy principles	New to this Training Package	
MEM30007A	Select common engineering materials	New to this Training Package	
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	New to this Training Package	
AURV229749A	Prepare spray painting materials and equipment	New to this Training Package	
AURV329603DA	Apply air dry and polyurethane enamel refinishing material	New to this Training Package	
BSBMGT503A	Prepare budgets and financial plans	New to this Training Package	

Unit Code	Unit title	Relationship	Comment in relation to MEA07 unit
BSBMGT504A	Manage budgets and financial plans	New to this Training Package	
PSPMNGT610A	Manage public sector financial resources	New to this Training Package	

Mapping of Qualifications

MSA07v3 to MEA07v2

MEA07v3 qualification code and title		MEA07v2	Comment in relation to the previous versions of the Training Package
MEA20410	Certificate II in Aeroskills	MEA20407	Sustainability unit added as a mandatory unit, no change to technical outcomes – not equivalent
MEA20510	Certificate II in Aircraft Line Maintenance	MEA20507	Sustainability unit added as a mandatory unit, no change to technical outcomes – not equivalent
MEA20610	Certificate II in Aircraft Surface Finishing	MEA20607	Sustainability unit added as a mandatory unit, no change to technical outcomes – not equivalent
MEA30110	Certificate III in Aircraft Surface Finishing	MEA30107	Sustainability unit added as a mandatory unit, no change to technical outcomes –

			not equivalent
MEA30310	Certificate III in Aircraft Life Support and Furnishing	MEA30309	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA40610	Certificate IV in Aeroskills (Avionics)	MEA40607	Sustainability unit added as a mandatory unit Revised component workshop units and training pathway Elective small aircraft maintenance units added no change to technical outcomes— not equivalent
MEA40710	Certificate IV in Aeroskills (Mechanical)	MEA40707	Sustainability unit added as a mandatory unit Revised component workshop units and training pathway Elective small aircraft maintenance units added no change to technical outcomes – not equivalent
MEA40810	Certificate IV in Aeroskills (Structures)	MEA40807	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA40910	Certificate IV in Aircraft Surface Finishing	MEA40907	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent

MEA41110	Certificate IV in Aircraft Life Support and Furnishing	MEA41109	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA41210	Certificate IV in Aeroskills (Armament)	New Qualification	
MEA50110	Diploma of Aeroskills (Avionics)	MEA50107	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA50210	Diploma of Aeroskills (Mechanical)	MEA50207	Sustainability unit added as a mandatory unit Mandatory unit MEA365A replaces MEA324B no change to technical outcomes – not equivalent
MEA50310	Diploma of Aviation Maintenance Management (Avionics)	MEA50307	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA50410	Diploma of Aviation Maintenance Management (Mechanical)	MEA50407	Sustainability unit added as a mandatory unit, no change to technical outcomes— not equivalent
MEA60110	Advanced Diploma of Aviation Maintenance Management (Avionics)	MEA60107	Sustainability unit added as a mandatory unit Units revised where necessary to update CASA references no change to technical outcomes— not

			equivalent
MEA60210	Advanced Diploma of Aviation Maintenance Management (Mechanical)	MEA60207	Sustainability unit added as a mandatory unit Units revised where necessary to update CASA references no change to technical outcomes– not equivalent

MEA07v2 to MEA07v1 and MEA07v1 to MEA97v4

MEA07v2 qualification code and title		MEA07v1	Comment in relation to the previous versions of the Training Package
MEA20407	Certificate II in Aeroskills	Unchanged	
MEA20507	Certificate II in Aircraft Line Maintenance	Unchanged	
MEA20607	Certificate II in Aircraft Surface Finishing	Unchanged	
MEA30107	Certificate III in Aircraft Surface Finishing	Unchanged	
MEA30309	Certificate III in Aircraft Life Support and Furnishing	New Qualification	Replaces <i>PUA31706 Certificate III in Public Safety (Aviation Life Support Maintenance)</i> – expanded choice of electives with wider coverage
MEA40607	Certificate IV in Aeroskills (Avionics)	Unchanged	
MEA40707	Certificate IV in	Unchanged	

	Aeroskills (Mechanical)		
MEA40807	Certificate IV in Aeroskills (Structures)	Unchanged	
MEA40907	Certificate IV in Aircraft Surface Finishing	Unchanged	
MEA41109	Certificate IV in Aircraft Life Support and Furnishing	New Qualification	
MEA50107	Diploma of Aeroskills (Avionics)	Unchanged	
MEA50207	Diploma of Aeroskills (Mechanical)	Unchanged	
MEA50307	Diploma of Aviation Maintenance Management (Avionics)	Unchanged	
MEA50407	Diploma of Aviation Maintenance Management (Mechanical)	Unchanged	
MEA60107	Advanced Diploma of Aviation Maintenance Management (Avionics)	Unchanged	
MEA60207	Advanced Diploma of Aviation Maintenance Management (Mechanical)	Unchanged	
MEA07v1		MEA97v4	
MEA20407	Certificate II in Aeroskills	Replaces MEA20401	Outcomes are unchanged
MEA20507	Certificate II in Aircraft Line Maintenance	New Qualification	
MEA20607	Certificate II in Aircraft Surface Finishing	New Qualification	
MEA30107	Certificate III in Aircraft	New Qualification	

	Surface Finishing		
MEA40607	Certificate IV in Aeroskills (Avionics)	Replaces MEA40602	Change in packaging requirements for the qualification but outcomes are equivalent
MEA40707	Certificate IV in Aeroskills (Mechanical)	Replaces MEA40702	Change in packaging requirements for the qualification but outcomes are equivalent
MEA40807	Certificate IV in Aeroskills (Structures)	Replaces MEA40802	Outcomes are unchanged
MEA40907	Certificate IV in Aircraft Surface Finishing	New Qualification	
MEA50107	Diploma of Aeroskills (Avionics)	Replaces MEA50104	Change in packaging requirements for the qualification but licensing outcomes are equivalent
MEA50207	Diploma of Aeroskills (Mechanical)	Replaces MEA50204	Change in packaging requirements for the qualification but licensing outcomes are equivalent
MEA50307	Diploma of Aviation Maintenance Management (Avionics)	New Qualification	
MEA50407	Diploma of Aviation Maintenance Management (Mechanical)	New Qualification	
MEA60107	Advanced Diploma of Aviation Maintenance Management (Avionics)	New Qualification	
MEA60207	Advanced Diploma of Aviation Maintenance Management (Mechanical)	New Qualification	

Overview

What is a Training Package?

A Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework (AQF) qualifications for a specific industry, industry sector or enterprise.

Each Training Package:

- provides a consistent and reliable set of components for training, recognising and assessing peoples skills, and may also have optional support materials
- enables nationally recognised qualifications to be awarded through direct assessment of workplace competencies
- encourages the development and delivery of flexible training which suits individual and industry requirements
- encourages learning and assessment in a work-related environment which leads to verifiable workplace outcomes.

How do Training Packages fit within the National Skills Framework?

The National Skills Framework applies nationally, is endorsed by the Ministerial Council for Vocational and Technical Education, and comprises the Australian Quality Training Framework 2010 (AQTF 2010), and Training Packages endorsed by the National Quality Council (NQC).

How are Training Packages developed?

Training Packages are developed by Industry Skills Councils or enterprises to meet the identified training needs of specific industries or industry sectors. To gain national endorsement of Training Packages, developers must provide evidence of extensive research, consultation and support within the industry area or enterprise.

How do Training Packages encourage flexibility?

Training Packages describe the skills and knowledge needed to perform effectively in the workplace without prescribing how people should be trained. Training Packages acknowledge that people can achieve vocational competency in many ways by emphasising what the learner can do, not how or where they learned to do it. For example, some experienced workers might be able to demonstrate competency against the units of competency, and even gain a qualification, without completing a formal training program.

With Training Packages, assessment and training may be conducted at the workplace, off-the-job, at a training organisation, during regular work, or through work experience, work placement, work simulation or any combination of these.

Who can deliver and assess using Training Packages?

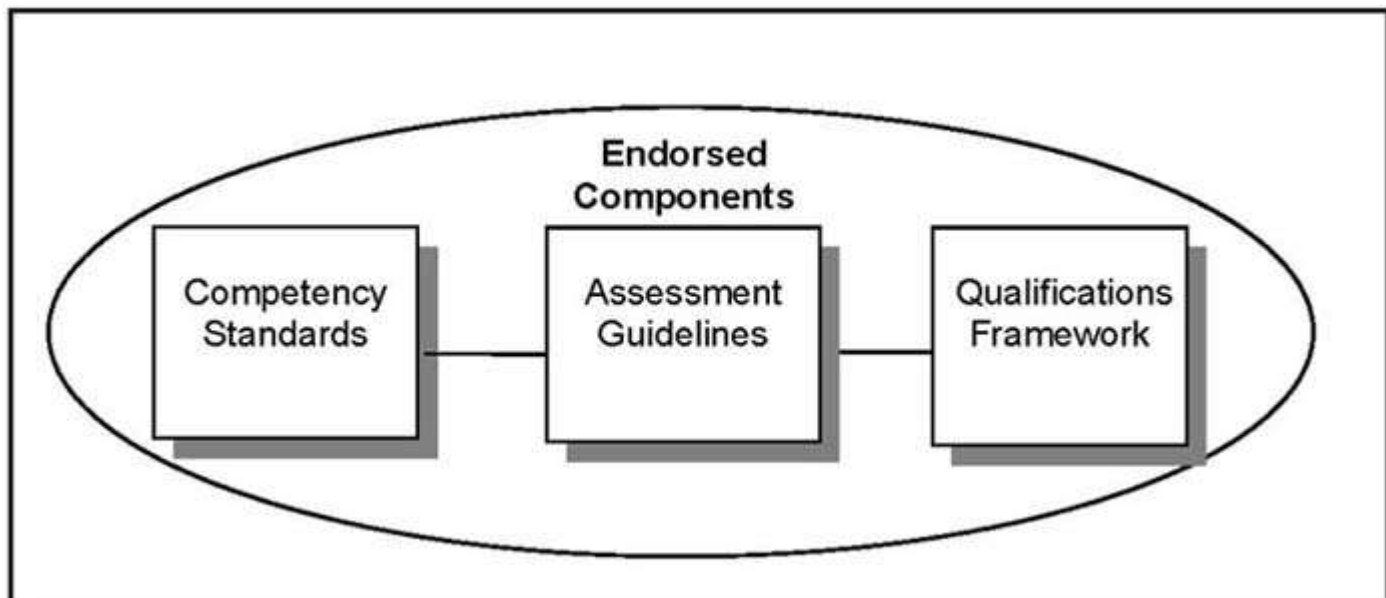
Training and assessment using Training Packages must be conducted by a Registered Training Organisation (RTO) that has the qualifications or specific units of competency on its scope of registration, or that works in partnership with another RTO, as specified in the AQTF 2010.

Training Package Components

Training Packages are made up of mandatory components endorsed by the NQC, and optional support materials.

Training Package Endorsed Components

The nationally endorsed components include the Competency Standards, Assessment Guidelines and Qualifications Framework. These form the basis of training and assessment in the Training Package and, as such, they must be used.



Competency Standards

Each unit of competency identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency as well as language, literacy and numeracy; and occupational health and safety requirements. The units of competency must be adhered to in training and assessment to ensure consistency of outcomes.

Assessment Guidelines

The Assessment Guidelines provide an industry framework to ensure all assessments meet industry needs and nationally agreed standards as expressed in the Training Package and the AQTF 2010. The Assessment Guidelines must be followed to ensure the integrity of assessment leading to nationally recognised qualifications.

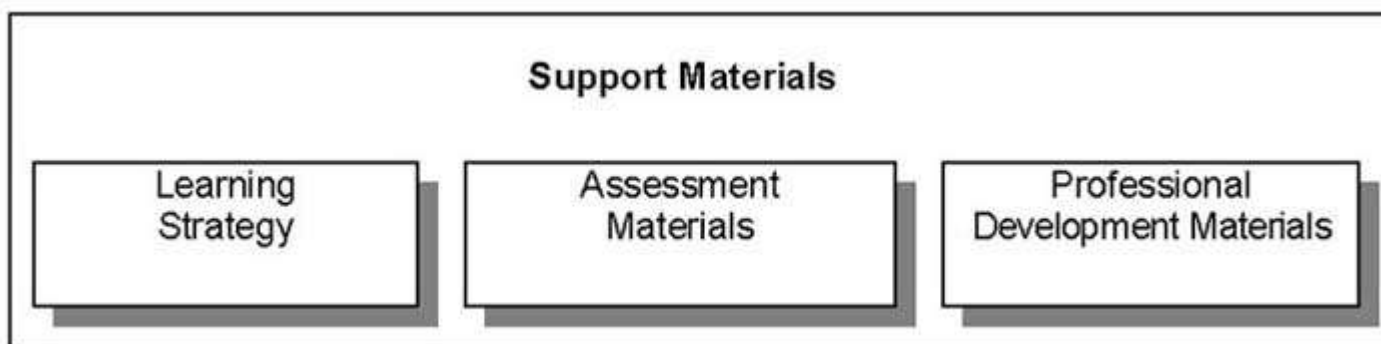
Qualifications Framework

Each Training Package provides details of those units of competency that must be achieved to award AQF qualifications. The rules around which units of competency can be combined to make up a valid AQF qualification in the Training Package are referred to as the "packaging rules". The packaging rules must be followed to ensure the integrity of nationally recognised qualifications issued.

Training Package Support Materials

The endorsed components of Training Packages are complemented and supported by optional support materials that provide for choice in the design of training and assessment to meet the needs of industry and learners.

Training Package support materials can relate to single or multiple units of competency, an industry sector, a qualification or the whole Training Package. They tend to fall into one or more of the categories illustrated below.



Training Package support materials are produced "by a range of stakeholders such as RTOs, individual trainers and assessors, private and commercial developers and Government agencies.

Where such materials have been quality assured through a process of "noting" by the NQC, they display the following official logo. Noted support materials are listed on the National Training Information Service (NTIS), together with a detailed description and information on the type of product and its availability < www.ntis.gov.au >.

It is not compulsory to submit support materials for noting; any resources that meet the requirements of the Training Package can be used.

Training Package, Qualification and Unit of Competency Codes

There are agreed conventions for the national codes used for Training Packages and their components. Always use the correct codes, exactly as they appear in the Training Package, **and with the code always before the title.**

Training Package Codes

Each Training Package has a unique five-character national code assigned when the Training Package is endorsed, for example MEA07. The first three characters are letters identifying the Training Package industry coverage and the last two characters are numbers identifying the year of endorsement.

Qualification Codes

Within each Training Package, each qualification has a unique eight-character code, for example MEA20410. Qualification codes are developed as follows:

- the first three letters identify the Training Package;
- the first number identifies the qualification level (noting that, in the qualification titles themselves, arabic numbers are **not** used);
- the next two numbers identify the position in the sequence of the qualification at that level; and
- the last two numbers identify the year in which the qualification was endorsed. (Where qualifications are added after the initial Training Package endorsement, the last two numbers may differ from other Training Package qualifications as they identify the year in which those particular qualifications were endorsed.)

Unit of Competency Codes

Within each Training Package, each unit of competency has a unique code. Unit of competency codes are assigned when the Training Package is endorsed, or when new units of competency are added to an existing endorsed Training Package. Unit codes are developed as follows:

- a typical code is made up of 12 characters, normally a mixture of uppercase letters and numbers, as in MEA114A;
- the first three characters signify the Training Package - MEA07 - in the above example and up to eight characters, relating to an industry sector, function or skill area, follow;
- the last character is always a letter and identifies the unit of competency version. An "A" at the end of the code indicates that this is the original unit of competency. "B", or another incremented version identifier means that minor changes have been made. Typically this would mean that wording has changed in the range statement or evidence guide, providing clearer intent; and
- where changes are made that alter the outcome, a new code is assigned and the title is changed.

Training Package, Qualification and Unit of Competency Titles

There are agreed conventions for titling Training Packages and their components. Always use the correct titles, exactly as they appear in the Training Package, and with the code always placed before the title.

Training Package Titles

The title of each endorsed Training Package is unique and relates the Training Packages broad industry coverage.

Qualification Titles

The title of each endorsed Training Package qualification is unique. Qualification titles use the following sequence:

- first, the qualification is identified as either Certificate I, Certificate II, Certificate III, Certificate IV, Diploma, Advanced Diploma, Vocational Graduate Certificate, or Vocational Graduate Diploma;

- this is followed by the words "in" for Certificates I to IV, and "of" for Diploma, Advanced Diploma, Vocational Graduate Certificate and Vocational Graduate Diploma;
- then, the industry descriptor, for example Telecommunications; and
- then, if applicable, the occupational or functional stream in brackets, for example (Computer Systems).

For example:

- MEA20410 Certificate II in Aeroskills

Unit of Competency Titles

Each unit of competency title is unique. Unit of competency titles describe the competency outcome concisely, and are written in sentence case.

For example:

- MEA101B Interpret occupational health and safety practices in aviation maintenance.

Historical and General Information

Historical and General Information

Introduction to the MEA07 Aeroskills Training Package Version 3

The MEA07 Aeroskills Training Package is a reviewed Training Package that replaced the MEA97 Aeroskills Training Package Version 4.00. MEA07 introduced a number of new qualifications and Units of Competency, and the training pathways to a number of the qualifications were varied to either increase flexibility, or to align with revised Civil Aviation Safety Authority (CASA) licensing requirements and related transitional arrangements covered by Civil Aviation Order (CAO) 100.66 Instrument 2006.

A number of further changes that could not be introduced in MEA07 were foreshadowed for progressive development and introduction in later versions of the Training Package. These were identified as:

- Transfer of Aircraft Life Support from the Public Safety Training Package
- Revision of component workshop units of competency, qualifications and training pathways
- Introduction of qualifications, training pathways and units of competency required to cover the maintenance of small aircraft in the General Aviation industry sector and CASA Aircraft Maintenance Engineer licensing for certification of small aircraft maintenance and release to service after maintenance
- Coverage of Non-Destructive Testing
- Coverage of aircraft welding.

Version 2 of MEA07 introduced Certificate III and IV qualifications in Aircraft Life Support and Furnishing and also covered a number of changes required to support CASA changes to the A, B1 and B2 Aircraft Maintenance Engineer licence privileges and required knowledge.

Version 3 introduces a Certificate IV qualification in Armament plus applicable technical stream units of competency that were sought by the ADF and covers maintenance of aircraft egress systems, stores suspension and stores management systems. Preparation, loading and maintenance of explosive ordnance and missiles is not covered and will remain with the Public Safety Training Package. Also included in Version 3 are:

- Revised component maintenance workshop units and qualification pathways
- Avionic and Mechanical small aircraft maintenance units of competency that were developed in concert with the CASA B3 Team which included broad representation of General Aviation stakeholders (qualifications specific to this industry sector cannot be included until CASA makes a final decision on the future licence structure for small aircraft maintenance)
- Sustainability units of competency have been added as an additional mandatory unit to all qualifications in line with government direction
- Revised Aircraft Maintenance Management units and qualifications in which updated references to Civil Aviation Safety Regulations have been included

Historical and General Information

- Update of some units in line with requests from industry stakeholders, Regulators and RTOs
- Skill Sets that are required to meet evolving regulatory requirements

The inclusion of Non-Destructive Testing (NDT) and Aircraft Welding is not yet possible. The Standards that underpin NDT are under review and the outcome may impact on the draft qualifications, units and Skill Sets. Draft aircraft welding units of competency and Skill Sets have been developed in consultation with CASA and the ADF, but their inclusion in MEA07 has to await the finalisation of the relevant CASA Manual of Standards and Acceptable Means of Compliance.

The draft MEA07 Version 3 has been processed through the standard MSC processes involving quality and equity reviews, review by State Training Authorities and by the Aerospace Education and Training Reference Group.

Introduction to the MEA07 Aeroskills Training Package

Introduction to the Industry

The Australian Aerospace Industry Aviation Maintenance Sector

The MEA07 Aeroskills Training Package covers the Aviation Maintenance Sector of the Australian Aerospace Industry. This sector covers maintenance performed on aircraft and their components in support of both civil and military aviation by a workforce of about 15,000 civilian and ADF personnel.

On the civil side, the workforce ranges from airlines employing large numbers of maintenance personnel to medium and small general aviation organisations that may employ as few as two or three individuals. In both the airline and general aviation areas there are third party maintenance organisations that support aircraft operators on a contractual basis. Again, these organisations vary in size from hundreds of maintenance personnel down to organisations with fewer than 10 personnel. Some maintenance organisations maintain both aircraft and their components while others maintain either complete aircraft or a range of aircraft components.

Military aviation consists of the three Services of the ADF where maintenance work is performed by uniformed personnel, plus a large network of contractors with civilian workforces that perform the deeper maintenance of most aircraft types and most component maintenance. The defence contractors are typically large aerospace organisations, or subsidiaries thereof. Many have a number of contracts and operate from a number of sites that may be geographically remote from one another.

Those involved in the maintenance of civil aircraft work under an extensive range of regulations that are aimed at ensuring a high level of flight safety and rely on licensed and specifically authorised individuals for the certification of maintenance. Those involved in the maintenance of State (military) aircraft and their components operate under a range of ADF regulations and standards that are also aimed at ensuring a high level of flight safety. Under the ADF system the certification of maintenance is based on task authorisation and levels of maintenance quality inspection. In both cases, the level of regulation relates to the old adage in aviation maintenance that "in the air you can't get out and fix something that has gone wrong and seemingly minor maintenance errors can have catastrophic consequences".

The importance of safe and efficient aviation services to the national economy cannot be overstated.

Aviation is of considerable importance in the use of often complex and very expensive equipment for the rapid transportation of people and cargo, in the provision of aerial work services to agriculture and in fire fighting. Military aviation is of considerable importance to national defence, and in the provision of services to the community at times of national disaster.

Aviation maintenance is thus a key national industry sector. It is diverse, highly technical and uses advanced technologies. It operates in a multi-billion dollar capital equipment environment and high quality and maximum safety requirements and standards are critical.

Introduction to the Industry

Qualifications Framework

The Australian Qualifications Framework

What is the Australian Qualifications Framework?

A brief overview of the Australian Qualifications Framework (AQF) follows. For a full explanation of the AQF, see the *AQF Implementation Handbook*.

http://www.aqf.edu.au/Portals/0/Documents/Handbook/AQF_Handbook_07.pdf

The AQF provides a comprehensive, nationally consistent framework for all qualifications in post-compulsory education and training in Australia. In the vocational education and training (VET) sector it assists national consistency for all trainees, learners, employers and providers by enabling national recognition of qualifications and Statements of Attainment.

Training Package qualifications in the VET sector must comply with the titles and guidelines of the AQF. Endorsed Training Packages provide a unique title for each AQF qualification which must always be reproduced accurately.

Qualifications

Training Packages can incorporate the following eight AQF qualifications.

- Certificate I in ...
- Certificate II in ...
- Certificate III in ...
- Certificate IV in ...
- Diploma of ...
- Advanced Diploma of ...
- Vocational Graduate Certificate of ...
- Vocational Graduate Diploma of ...

On completion of the requirements defined in the Training Package, a Registered Training Organisation (RTO) may issue a nationally recognised AQF qualification. Issuance of AQF qualifications must comply with the advice provided in the *AQF Implementation Handbook* and the *AQTF 2010 Essential Standards for Initial and Continuing Registration*.

Statement of Attainment

A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualification(s)/course(s). Issuance of Statements of Attainment must comply with the advice provided in the current *AQF Implementation Handbook* and the *AQTF 2010 Essential Standards for Initial and Continuing Registration*.

Under the AQTF 2010, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

AQF Guidelines and Learning Outcomes

The *AQF Implementation Handbook* provides a comprehensive guideline for each AQF qualification. A summary of the learning outcome characteristics and their distinguishing features for each VET related AQF qualification is provided below.

Certificate I

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform a defined range of activities most of which may be routine and predictable.

Applications may include a variety of employment related skills including preparatory access and participation skills, broad-based induction skills and/or specific workplace skills. They may also include participation in a team or work group.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate knowledge by recall in a narrow range of areas;
- demonstrate basic practical skills, such as the use of relevant tools;
- perform a sequence of routine tasks given clear direction

receive and pass on messages/information.

Certificate II

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge application where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range of operations to be applied.

Performance of a prescribed range of functions involving known routines and procedures and some accountability for the quality of outcomes.

Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate basic operational knowledge in a moderate range of areas;
- apply a defined range of skills;
- apply known solutions to a limited range of predictable problems;
- perform a range of tasks where choice between a limited range of options is required;
- assess and record information from varied sources;
- take limited responsibility for own outputs in work and learning.

Certificate III

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the selection of equipment, services or contingency measures and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team co-ordination may be involved.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate some relevant theoretical knowledge
- apply a range of well-developed skills
- apply known solutions to a variety of predictable problems
- perform processes that require a range of well-developed skills where some discretion and judgement is required
- interpret available information, using discretion and judgement
- take responsibility for own outputs in work and learning
- take limited responsibility for the output of others.

Certificate IV

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills. Applications involve responsibility for, and limited organisation of, others.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate understanding of a broad knowledge base incorporating some theoretical concepts
- apply solutions to a defined range of unpredictable problems

- identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas
- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others.

Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and co-ordination.

The self directed application of knowledge and skills, with substantial depth in some areas where judgment is required in planning and selecting appropriate equipment, services and techniques for self and others.

Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team co-ordination may be involved.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:

- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas
- analyse and plan approaches to technical problems or management requirements
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations
- evaluate information, using it to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters
- take some responsibility for the achievement of group outcomes.

Advanced Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of new criteria or applications or knowledge or procedures.

The application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts in relation to either varied or highly specific functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:

- demonstrate understanding of specialised knowledge with depth in some areas
- analyse, diagnose, design and execute judgements across a broad range of technical or management functions
- generate ideas through the analysis of information and concepts at an abstract level
- demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills
- demonstrate accountability for personal outputs within broad parameters
- demonstrate accountability for personal and group outcomes within broad parameters.

Vocational Graduate Certificate

Characteristics of competencies or learning outcomes

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth and complexity involving the initiation, analysis, design, planning, execution and evaluation of technical and management functions in highly varied and highly specialised contexts.
- Applications involve making significant, high-level, independent judgements in major broad or planning, design, operational, technical and management functions in highly varied and specialised contexts. They may include responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

Distinguishing features of learning outcomes

- Demonstrate the self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major broad or technical and management functions in highly varied and highly specialised contexts.
- Generate and evaluate ideas through the analysis of information and concepts at an abstract level.
- Demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills in complex contexts.
- Demonstrate responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.

Vocational Graduate Diploma

Characteristics of competencies or learning outcomes

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth, depth and complexity involving the initiation, analysis, design, planning, execution and evaluation of major functions, both broad and highly specialised, in highly varied and highly specialised contexts.
- Further specialisation within a systematic and coherent body of knowledge.
- Applications involve making high-level, fully independent, complex judgements in broad planning, design, operational, technical and management functions in highly varied and highly specialised contexts. They may include full responsibility and accountability for all aspects of work and functions of others, including planning, budgeting and strategy development.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

Distinguishing features of learning outcomes

- Demonstrate the self-directed development and achievement of broad and highly specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major functions, both broad and within highly varied and highly specialised contexts.
- Generate and evaluate complex ideas through the analysis of information and concepts at an abstract level.
- Demonstrate an expert command of wide-ranging, highly specialised, technical, creative or conceptual skills in complex and highly specialised or varied contexts.
- Demonstrate full responsibility and accountability for personal outputs.
- Demonstrate full responsibility and accountability for all aspects of the work or functions of others, including planning, budgeting and strategy.
-

Qualification Pathways

Qualification Pathways

The following pathways charts are provided to show the types of pathways into and from qualifications that are possible with this Training Package. For more information about qualifications and pathways contact Manufacturing Industry Skills Council (<http://www.mskills.com.au>).

The Aeroskills Training Package Qualifications

The MEA07 Aeroskills Training Package Version 3 includes national qualifications at Certificate II, Certificate III, Certificate IV, Diploma and Advanced Diploma levels. The Training Package provides national qualification outcomes based on recognition of competency achievement as specified under the Competency Standards section of this Training Package. These qualifications can be accessed through traineeship and apprenticeship pathways, or through other pathways that do not involve a contract of training, such as recognition of prior learning.

Packaging units of competency for a qualification

Qualifications may be achieved in a number of ways, but regardless of how they are attained, they must be based on the achievement of a package of competency standards.

Each qualification is made up of mandatory and elective common and technical stream units:

- the common units and mandatory technical stream units for each qualification ensure the integrity of the qualification and effective alignment with Civil Aviation Safety Authority (CASA) and Australian Defence Force (ADF) regulatory requirements
- the ability to select from a range of elective units provides flexibility

The units of competency to be achieved for each qualification have been determined in consultation with industry and the Regulators (CASA and the ADF). Any RTO issuing a qualification will need to comply with this framework. However, RTOs are encouraged to offer flexible learning delivery formats to suit industry needs (what is taught, how, when, where delivered etc).

People with experience in related industries such as Manufacturing, Engineering, Automotive and Electrotechnology may be able to achieve competence in component workshop units from the Aerospace Industry Competency Standards with limited levels of 'gap' training and experience. In Version 3 this process is facilitated through a common "conversion" unit of competency and a number of Skill Sets relating to specific component workshop employment areas.

Certificate II Aeroskills qualifications

The MEA07 Aeroskills Training Package includes the following qualifications at Certificate II level:

- MEA20410 Certificate II in Aeroskills
- MEA20510 Certificate II in Aircraft Line Maintenance
- MEA20610 Certificate II in Aircraft Surface Finishing

MEA20410 Certificate II in Aeroskills

The MEA20410 Certificate II in Aeroskills articulates with, and provides credit towards, the Aeroskills Training Package 'trade' qualifications at AQF Certificate IV level with common units given full recognition at the higher level. The elective units may provide partial credit towards related higher level units as people progress from AQFII to the higher qualification. The relationship between the AQFII and AQFIV elective units is as follows:

MEA20410 Units of Competency	Related AQFIV Units of Competency
MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware/components	MEA201B Remove and install miscellaneous aircraft electrical hardware/components
MEA239B Fabricate aircraft electrical looms and harnesses	MEA246C Fabricate and/or repair aircraft electrical hardware or parts

MEA240B Use electrical test equipment to perform basic electrical tests	MEA260B Use electrical test equipment
MEA329B Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts	MEA380A Repair and/or overhaul aircraft hydraulic system components MEA381A Repair and/or overhaul aircraft pneumatic system components MEA382A Repair and/or overhaul aircraft fuel system components
MEA330B Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	MEA328C Maintain and/or repair aircraft mechanical components or parts
MEA331B Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts	MEA383A Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules MEA384A Repair and/or overhaul gas turbine engine combustion section components and/or modules MEA385A Repair and/or overhaul gas turbine engine turbine and exhaust section components MEA386A Repair and/or overhaul gas turbine engine ancillary section components
MEA332B Dismantle, inspect, maintain and assemble aircraft mechanical components or parts	MEA328C Maintain and/or repair aircraft mechanical components or parts
MEA333B Dismantle, inspect, maintain and assemble aircraft piston engine components or parts	MEA388A Repair and/or overhaul piston engines
MEA406B Repair/modify aircraft non-primary structural sheetmetal components	MEA403B Repair/modify aircraft structure
MEA407B Repair/modify aircraft non-primary structural non-metallic components	MEA405B Repair/modify aircraft composite material structure/components

The MEA20410 Certificate II in Aeroskills has a set of packaging rules that provide multiple pathways in three technical areas of Avionics, Mechanical and Structures. This design promotes the achievement of a multi-skilled qualification that can directly lead to the three established aircraft 'trade' areas and provide the maximum credit transfer.

The qualification has been designed to allow maximum flexibility to enable enterprises to choose the most appropriate pathway/s for their needs. The technical focus and application of the qualification achieved by each learner can be easily determined through reference to the Log of Industrial Experience and Achievement.

To achieve a MEA20410 Certificate II in Aeroskills, both common and elective units must be completed. The technical units are presented in ways such that the qualification will have a dominant technical area (a primary area of Avionic, Mechanical or Structures) and a complementary supporting component (the 'minor' component).

The 'major' and 'minor' components of the qualification must be drawn from different technical areas.

Common units	+	technical units (major component)	+	technical unit (minor component)	=	Certificate II in Aeroskills MEA20410

MEA20510 Certificate II in Aircraft Line Maintenance

This qualification was developed to meet CASA requirements for the grant of an Aircraft Maintenance Engineer A Licence (A1, A2, A3 or A4) in accordance with Civil Aviation Safety Regulation (CASR) Part 66, and with transitional arrangements under CAO 100.66, in accordance with which maintenance authorities equivalent to the A licences may be granted. The qualification requirements must be met also in accordance with the requirements of CAO 100.66 pending the issue of CASR Part 66, including full coverage of CASA syllabus requirements as listed in Appendix 1. Training delivery is also required to be in accordance with CAO 100.66 requirements pending the issue of CASR Part 147.

Because of the need to comply with licensing requirements there is no flexibility in the selection of units, other than for the purpose of meeting the specified requirements for the grant of an A1, A2, A3 or A4 maintenance authority/licence.

Advice to contact CASA for authoritative information on licensing requirements

Selected units of competency and qualifications in this Training Package have been designed to satisfy draft requirements proposed by CASA for Licensed Aircraft Maintenance Engineers under the proposed Civil Aviation Safety Regulation Part 66, and to comply with the transitional arrangements covered by CAO 100.66.

Training programs will allow entry to optional licensing pathways leading to both trade recognition and Diploma-level preparation for CASA interim maintenance authorities/licensing. These programs will be conducted by Registered Training Organisations which will also have complementary CASA approval as maintenance training organisations under CAO 100.66 and eventually the proposed Civil Aviation Safety Regulation Part 147.

This Aeroskills Training Package publication provides advisory information based on discussions with CASA, including their anticipated future requirements. All possible care has been taken in the preparation of this material however persons should not rely solely on this publication on matters involving CASA's current or proposed licensing requirements or arrangements.

Precise information on licensing, current and proposed compliance requirements can be obtained from CASA on telephone 131 757 or at www.casa.gov.au.

The MEA20510 Certificate II in Aircraft Line Maintenance articulates with, and provides credit towards, the Aeroskills Training Package 'trade' qualifications at AQF Certificate IV level with common units given full recognition at the higher level. The elective units may be credited as follows:

MEA20510 elective units	Possible credit
MEA240B Use electrical test equipment to perform basic electrical tests	Partial towards MEA260B Use electrical test equipment
MEA264A Remove and install aircraft electrical/avionic components during line maintenance	Partial towards MEA202C Remove and install basic aircraft electrical system components and MEA203C Remove and install advanced aircraft electrical system components
MEA265A Remove and install general aircraft electrical hardware	Partial towards MEA201B Remove and install miscellaneous aircraft electrical hardware/components
MEA344A Remove and install aircraft components	Partial towards MEA302C Remove and install aircraft hydro mechanical and landing gear system components
MEA345A Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft	Full credit for MEA301C Perform aircraft flight servicing
MEA346A Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft	
MEA347A Perform scheduled line maintenance activities on piston engine fixed wing aircraft	
MEA348A Perform scheduled line maintenance activities on	

piston engine rotary wing aircraft	
MEA418A Perform basic repair of aircraft internal fittings during line maintenance	Partial towards MEA339B Inspect, repair and maintain aircraft structures

MEA20610 Certificate II in Aircraft Surface Finishing

This qualification was developed to meet industry and ADF requirements for qualifications and competencies to cover the surface finishing of aircraft and aircraft components. There is a limited degree of flexibility in the selection of units to cover a range of multi-skilling activities required by industry organisations.

The MEA20610 Certificate II in Aircraft Surface Finishing articulates with, and provides credit towards, the surface finishing qualifications at Certificate III and IV levels. In addition, the common core units and electives that provide multi-skilling would provide significant credit towards other Aeroskills Training Package qualifications at AQF Certificate II level. The elective units may be credited as follows:

MEA20610 elective units	Possible credit
MEA330B Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	Full credit towards MEA20410 Certificate II in Aeroskills
MEA406B Repair/modify aircraft non-primary structural sheetmetal components	Full credit towards MEA20410 Certificate II in Aeroskills
MEA407B Repair/modify aircraft non-primary structural non-metallic components	Full credit towards MEA20410 Certificate II in Aeroskills

Certificate III Aeroskills qualifications

There are two qualifications at Certificate III in the Aeroskills Training Package MEA07 Version 3. They are MEA30110 Certificate III in Aircraft Surface Finishing which was introduced in the Aeroskills Training Package MEA07 Version 1, and MEA30310 Certificate III in Aircraft Life Support and Furnishing which is introduced for the first time in MEA07 Version 2.

MEA30110 Certificate III in Aircraft Surface Finishing

A number of industry organisations and the ADF train and employ aircraft surface finishers. In some cases these individuals are trained from entry level and in other cases they are recruited and converted from automotive spray painting to aircraft surface finishing. The combination of competencies in surface finishing tasks and the level of multi-skilling required by the relevant organisations resulted in MEA30110 Certificate III in Aircraft Surface Finishing.

The MEA30110 Certificate III in Aircraft Surface Finishing articulates with, and provides credit towards, the surface finishing qualification at Certificate IV level. In addition, the common units and unit MEA401B Inspect aircraft structures would provide significant credit towards other Aeroskills Training Package qualifications at AQF Certificate IV level.

MEA30210 Certificate III in Aircraft Life Support and Furnishing

The Certificate III in Aircraft Life Support and Furnishing is based on the Certificate III in Public Safety (Aviation Life Support Maintenance) PUA31706 which was to be deleted from that Training Package after MEA07 Version 2 was implemented. RTOs will be expected to transfer within 12 months from release date of MEA07v2.

In developing the qualification for the Aeroskills Training Package there was extensive consultation with the ADF (for whom PUA31706 was developed), and with the civil aviation maintenance industry which resulted in the coverage of aircraft furnishing maintenance being increased. The qualification now covers the maintenance of aircrew equipment (such as helmets, oxygen masks, anti-G suits and immersion suits), parachutes, survival vests for aircrew and passengers, life rafts, aircraft internal fittings and soft furnishings. In the case of soft furnishings, both fabrication and maintenance is covered. Multi-skilling is also provided for in the inspection and repair of non-structural metallic and non-metallic components, and for limited maintenance of electrical and electronic systems and components in seats and pods.

The Certificate III in Aircraft Life Support and Furnishing fully articulates towards the Certificate IV in Aircraft Life Support and Furnishing. It also includes a number of common units of competency that are common to other qualifications at Certificate III and Certificate IV levels. The relationship between the units required for this qualification and those applicable to the Certificate III in Public Safety (Aviation Life Support Maintenance) PUA31706 is as follows:

MEA30210 Units	PUA31706 Units
MEA101B Interpret occupational health and safety practices in aviation maintenance	Same (alternative of BSBCMN211A Participate in workplace safety procedures provides partial coverage)
MEA103B Plan and organise aviation maintenance work activities	Same
MEA105B Apply quality standards applicable to aviation maintenance processes	Same

MEA107B Interpret and use aviation maintenance industry manuals and specifications	Same
MEA108B Complete aviation maintenance industry documentation	Same
MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	Same
MEA118A Conduct self in the aviation maintenance environment	Covered in part by each of PUADFEQ001A Work with equity and diversity, PUACOM001B Communicate in the workplace, PUATEA001A Work in a team
MEA240B Use electrical test equipment to perform basic electrical tests	Nil – additional multi-skilling
MEA304B Remove and install non-pressurised aircraft structural and non-structural components	Nil – additional multi-skilling
MEA317B Remove and install pressurised aircraft structural and non-structural components	Nil – additional multi-skilling
MEA411A Remove surface coatings from aircraft or aircraft components	Nil – additional multi-skilling
MEA412A Pre-treat aluminium alloy surfaces	Nil – additional multi-skilling
MEA414A Remove light corrosion	Nil – additional multi-skilling
MEA416A Apply aircraft identification markings, graphics and decals	Nil – additional multi-skilling
MEA419A Inspect and repair/modify aircraft cabin/cockpit non-primary structure metallic and non-metallic components	Nil – new unit
MEA501A Maintain and fit Anti-G suits	Equivalent to PUADFEFLS001A
MEA502A Maintain and fit helmets	Equivalent to PUADFEFLS002A
MEA503A Maintain and fit immersion	Equivalent to PUADFEFLS003A

suits	
MEA504A Maintain and fit oxygen masks	Equivalent to PUADEFLS004A
MEA505A Maintain and pack parachutes	Equivalent to PUADEFLS005A
MEA506A Maintain and pack survival inflatable life rafts and escape slides	Equivalent to PUADEFLS006A
MEA507A Maintain, pack and fit survival inflatable buoyancy vests	Equivalent to PUADEFLS007A
MEA508A Maintain, install and remove restraint systems	Equivalent to PUADEFLS008A
MEA509A Manufacture, repair and alter aircraft related fabric components	Equivalent to PUADEFLS009A
MEA510A Maintain seat and pod electrical and electronic systems	Nil – new unit
MEA511A Operate and maintain sewing machines and overlockers	Equivalent to LMTPTF05CA
PUADEFEO101B Work safely with explosive ordnance	Same
PUADEFEO501B Conduct explosive ordnance inspection	Same
MEM12001B Use comparison and basic measuring devices	Same as MEM12.1B Use comparison and basic measuring devices
AURV231208A Carry out trimming of vehicle components	
AURV231268A Select and apply trim/fabric materials and determine attachment methods	Equivalent to AUR31268B Select and apply trim/fabric materials
AURV231368A Select and apply trim/fabric adhesives	Part covered by LMTPTF09BA Use adhesives - 2
LMFSF2001B Cut single layer fabrics	Same
LMFSF2002B Machine sew materials	Same
LMFUP3012B Apply marine sewing and	Same

installation techniques	
LMTTF2008A Use adhesives	Equivalent to LMPRTF09BA Use adhesives - 2

Certificate IV Aeroskills qualifications

The Aeroskills Training Package MEA07 includes six Certificate IV qualifications:

MEA40610 Certificate IV in Aeroskills (Avionics)

MEA40710 Certificate IV in Aeroskills (Mechanical)

MEA40810 Certificate IV in Aeroskills (Structures)

MEA40910 Certificate IV in Aircraft Surface Finishing

MEA41110 Certificate IV in Aircraft Life Support and Furnishing

MEA41210 Certificate IV in Aeroskills (Armament)

Certificate IV qualifications outcomes

The Certificate IV qualifications in Aeroskills contained in the MEA07 Aeroskills Training Package Version 3 specify competencies required for trade-level outcomes in maintenance, repair and overhaul for the aerospace engineering industry. They have been structured to produce a competent base-level aerospace engineering technician; the level expected on completion of an aerospace apprenticeship in Avionics, Mechanical, Structures or Armament streams, or following training beyond trade level in Aircraft Surface Finishing or in Aircraft Life Support and Furnishing. Traineeship pathways are also included, enabling the greatest possible access to careers in the aerospace industry.

Credit transfer and articulation

Details of credit transfer and articulation from Certificate II and III levels to Certificate IV have already been provided. Where credit cannot be allocated on a whole unit basis, the relationship with Certificate IV level units will be clearly mapped and identified in separate documentation at a later date. This will assist learners, enterprises and RTOs in realising the greatest possible efficiencies in terms of learning and skills acquisition.

A separate mapping exercise to document the level of credit transfer available from, and to, competencies under other related industry Training Packages, such as Metal and Engineering, Electrotechnology and Automotive, towards the Aeroskills Certificate IV qualifications has resulted in the development of a common "conversion" unit and a number of Skill Sets that are introduced in Version 3. These Skill Sets lead to employment in component maintenance workshops and meet regulatory requirements for maintenance organisations to be able to demonstrate the attainment of competencies required for employment on specific types of component maintenance.

The Certificate IV qualifications articulate with, and provide credit towards, the qualifications at Diploma and Advanced Diploma levels. This provides avenues to meeting the full CASA requirements for the grant of B1 and B2 licences, and to prepare individuals to work in maintenance management and maintenance-related integrated logistic support activities within both the ADF and CASA regulatory environments.

The MEA41210 Certificate IV in Aeroskills (Armament) is somewhat different since, at present, training is available only to trainees who have enlisted in the RAAF and ongoing career development involves, in part, the attainment of additional qualifications from the Public Safety Training Package that cover weapons and explosive ordnance.

Certificate IV structure and packaging rules

Each Certificate IV qualification is comprised of common units (common to all qualifications), mandatory technical stream units required for regulatory compliance and elective technical units that provide the greatest possible degree of flexibility.

Common units: Some common units are obligatory in all Aeroskills qualifications that relate to workers directly involved in aircraft maintenance, repair and overhaul. They cover 'job enabling and job readiness skills' and support the achievement of the technical competencies.

Technical units: These are divided into the technical streams of Avionics, Mechanical, Structures, Aircraft Surface Finishing, Aircraft Life Support and Furnishing and Armament.

The structure of each qualification can be represented in a generic form as follows:

Common units + **Technical stream units** = **Certificate IV**

Diploma level Aeroskills qualifications

The MEA07 Aeroskills Training Package includes four Diploma level qualifications:

MEA50110 Diploma of Aeroskills (Avionics)

MEA50210 Diploma of Aeroskills (Mechanical)

MEA50310 Diploma of Aviation Maintenance Management (Avionics)

MEA50410 Diploma of Aviation Maintenance Management (Mechanical)

The two Diplomas of Aeroskills provide competency pathways which cover a combination of Certificate IV and "beyond trade" Diploma-level competencies that together fully meet proposed CASA licensing requirements for the B1 (MEA50210 refers) and B2 (MEA50110 refers) licences and equivalent interim maintenance authorities that may be granted under CAO 100.66. Individuals who obtain one of these Diplomas under the training provisions of CASR Part 147 or the transitional provisions of CAO 100.66 and having met the CASR Part 66 (or those included in CAO 100.66) licensing syllabus requirements as shown in Appendix 1 will have met the specified criteria for the grant of the applicable licence or equivalent maintenance authority.

The two Diplomas of Aviation Maintenance Management provide para-professional qualifications that meet aviation maintenance industry needs for junior maintenance managers and for employment in maintenance-related integrated logistic support activities within either the ADF or CASA regulatory systems.

CASA regulatory review timetable

CASA has issued CAO 100.66 to provide transition of the industry to the B1 and B2 licence system and the Regulations are expected to be enacted in the near future. The material used to develop the Diploma of Aeroskills pathways was taken initially from the European Aviation Safety Authority Regulations and associated means of compliance that are the basis for the revised CASA regulations, and more recently from CAO 100.66.

Conversion of licensees from the old CASR 31 system to the Part 66 B1 and B2 licences will soon begin and the process is supported by a range of Skill Sets introduced with Version 3 that specify the competencies required for the removal of a range of licence exclusions that will be necessary at the time of licence conversion.

A revised licensing system for use in the General Aviation sector is still under development. However, small aircraft maintenance units of competency that have been developed during this process are included in Version 3 as electives to the existing Certificate IV qualifications to both provide stakeholders with the ability to structure training pathways that suit small aircraft maintainers, and to support the process of conversion from the CAR 31 licensing system to the CASR Part 66 licences. Qualifications that lead to small aircraft maintenance licences are expected to be included in the next version of the Aeroskills Training Package.

Advice to contact CASA for authoritative information on licensing requirements

Selected units of competency and qualifications in this Training Package have been designed to satisfy draft requirements proposed by CASA for Licensed Aircraft Maintenance Engineers under the proposed Civil Aviation Safety Regulation Part 66, and to comply with the transitional arrangements covered by CAO 100.66.

Training programs will allow entry to optional licensing pathways leading to both trade recognition and Diploma-level preparation for CASA interim maintenance authorities/ licensing. These programs will be conducted by Registered Training Organisations which will also have complementary CASA approval as maintenance training organisations under CAO 100.66 and eventually the proposed Civil Aviation Safety Regulation Part 147.

This Aeroskills Training Package publication provides advisory information based on discussions with CASA, including their anticipated future requirements. All possible care has been taken in the preparation of this material however persons should not rely solely on this publication on matters involving CASA's current or proposed licensing requirements or arrangements.

Precise information on licensing, current and proposed compliance requirements can be obtained from CASA on telephone 131 757 or at www.casa.gov.au.

Credit transfer and articulation

The Certificate IV qualifications in Aeroskills in Avionics and Mechanical (MEA40610 and MEA40710) articulate with or provide substantial credit towards the four Diploma level qualifications MEA50110 Diploma of Aeroskills (Avionics), MEA50210 Diploma of Aeroskills (Mechanical), MEA50310 Diploma of Aviation Maintenance Management (Avionics) and MEA50410 Diploma of Aviation Maintenance Management (Mechanical).

The MEA40810 Certificate IV in Aeroskills (Structures), MEA40910 Certificate IV in Aircraft Surface Finishing and MEA41110 Certificate IV in Aircraft Life Support and Furnishing qualifications do not articulate with the Diplomas, but individuals with one of those qualifications would be entitled to credit for a number of common Units of Competency.

Qualification structure – flexibility

In the case of the two Diplomas of Aeroskills, flexibility is limited by the requirement to precisely meet the specified licensing criteria of CASR Part 66.

However, in the case of the Diplomas of Aviation Maintenance Management there is considerable flexibility so that organisations and individuals can tailor the qualification to either maintenance management or specialist employment in maintenance-related integrated logistic support areas in either the ADF or CASA regulatory environment.

Training and qualifications pathways including Apprenticeships

The new Diploma qualifications can be accessed through apprenticeship pathways, through a traineeship or through later post-graduate study. In the case of the Diplomas of Aviation Maintenance Management the qualifications could be also accessed through direct entry onto a course run by an RTO. These qualifications may also be achieved through a process of recognition of prior learning.

Details of indicative training pathways (or competency profiles) will be made available for use by enterprises, RTOs, NACs etc. as part of the non-endorsed Training Package information. These pathways cover different job types including options providing licensing preparation. However, it is stressed that they are intended for illustrative purposes and should not be viewed as limiting. A diagram showing the various pathways to all qualifications in the Aeroskills Training Package may be found at the end of this section.

Structure and packaging rules

The two Diplomas of Aeroskills provide competency pathways which include specified embedded ‘trade’ competency units meeting requirements for Certificate IV and new ‘beyond trade’ licensing requirements which combine to fully meet proposed CASA requirements for issue of particular LAME licences as specified under CASR Part 66.

Each Diploma qualification (avionics or mechanical) is comprised of common units of competency (common to both qualifications) and specified elective technical stream units. Both core and technical streams include new additional ‘beyond trade’ obligatory subsets of units supporting achievement of the particular LAME licence sought.

Common units: The common units include those obligatory units common to other Aeroskills qualifications, with an additional obligatory subset of common units supporting achievement of ‘beyond trade’ diploma level CASA licensing requirements.

Technical units: These are divided into two technical streams of Avionics and Mechanical. The Avionics and Mechanical technical stream units specified for the Diploma qualifications are those designed to suit various optional licensing pathways. They describe work role activities performed in a hangar or on the tarmac or flight line (as part of the ‘trade’ skills profile for an Aircraft Maintenance Engineer, AME). Additionally there is also an obligatory subset of technical units (having avionics or mechanical focus as required) supporting achievement of CASA ‘beyond trade’ licensing requirements.

The structure of each qualification can be represented in a generic form as follows:

$$\begin{array}{ccccc} \text{Specified} & & \text{Specified} & & \\ \text{Certificate IV} & + & \text{Licensing} & = & \text{Diploma of} \\ \text{requirements} & & \text{requirements} & & \text{Aeroskills} \end{array}$$

The two Diplomas of Aviation Maintenance Management consist of a number of common para-professional units that apply to both qualifications, plus some that are chosen according to the intended area of employment. In addition, there are a number of imported elective para-professional engineering units. Also provided are a number of preliminary units that must be attained where the individual is not articulating from MEA40610 Certificate IV in Aeroskills (Avionics) or MEA40710 Certificate IV in Aeroskills (Mechanical).

The structure of each qualification can be represented in a generic form as follows:

Preliminary units (if required)	+	Applicable common units	+	Elective engineering units	=	Diploma of Aviation Maintenance Management

Advanced Diploma level Aeroskills qualifications

The MEA07V3 Aeroskills Training Package includes two Advanced Diploma level qualifications:

- MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics)
- MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical)
-

These qualifications provide competencies required to work at the higher para-professional and maintenance manager levels in civil aviation maintenance organisations operating under both the CASA and the ADF airworthiness regulatory systems, and within the ADF. Through selection of elective units within the framework of the packaging rules for each qualification individuals and organisations can adapt the qualifications for employment as managers within aviation maintenance organisations, or as managers within engineering support organisations dealing with aspects of Integrated Logistic Support (ILS).

Credit transfer and articulation

There are articulation pathways to the MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics) from the following three qualifications:

- MEA50110 Diploma of Aeroskills (Avionics)
- MEA50310 Diploma of Aviation Maintenance Management (Avionics)
- MEA40610 Certificate IV in Aeroskills (Avionics).
-

Similarly, there are articulation pathways to MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical) from:

- MEA50210 Diploma of Aeroskills (Mechanical)
- MEA50410 Diploma of Aviation Maintenance Management (Mechanical)
- MEA40710 Certificate IV in Aeroskills (Mechanical).

Qualification structure – flexibility

Through appropriate selection of elective units the two Advanced Diplomas can be adapted to prepare individuals for employment in maintenance organisation positions such as Senior Maintenance Manager or Maintenance Controller, or as managers of a range of activities in engineering support organisations such as spares assessing management, repairable item management and aviation maintenance publication management.

Training and qualification pathways

The Advanced Diploma qualifications can be accessed through training provided by an RTO that articulates from either Diploma of Aviation Maintenance Management, either Diploma of Aeroskills or from an applicable Certificate IV in Aeroskills. A direct entry pathway is not available because of regulatory requirements associated with the areas of employment relevant to the qualifications. The qualifications may also be attained wholly or in part through a process of recognition of prior learning.

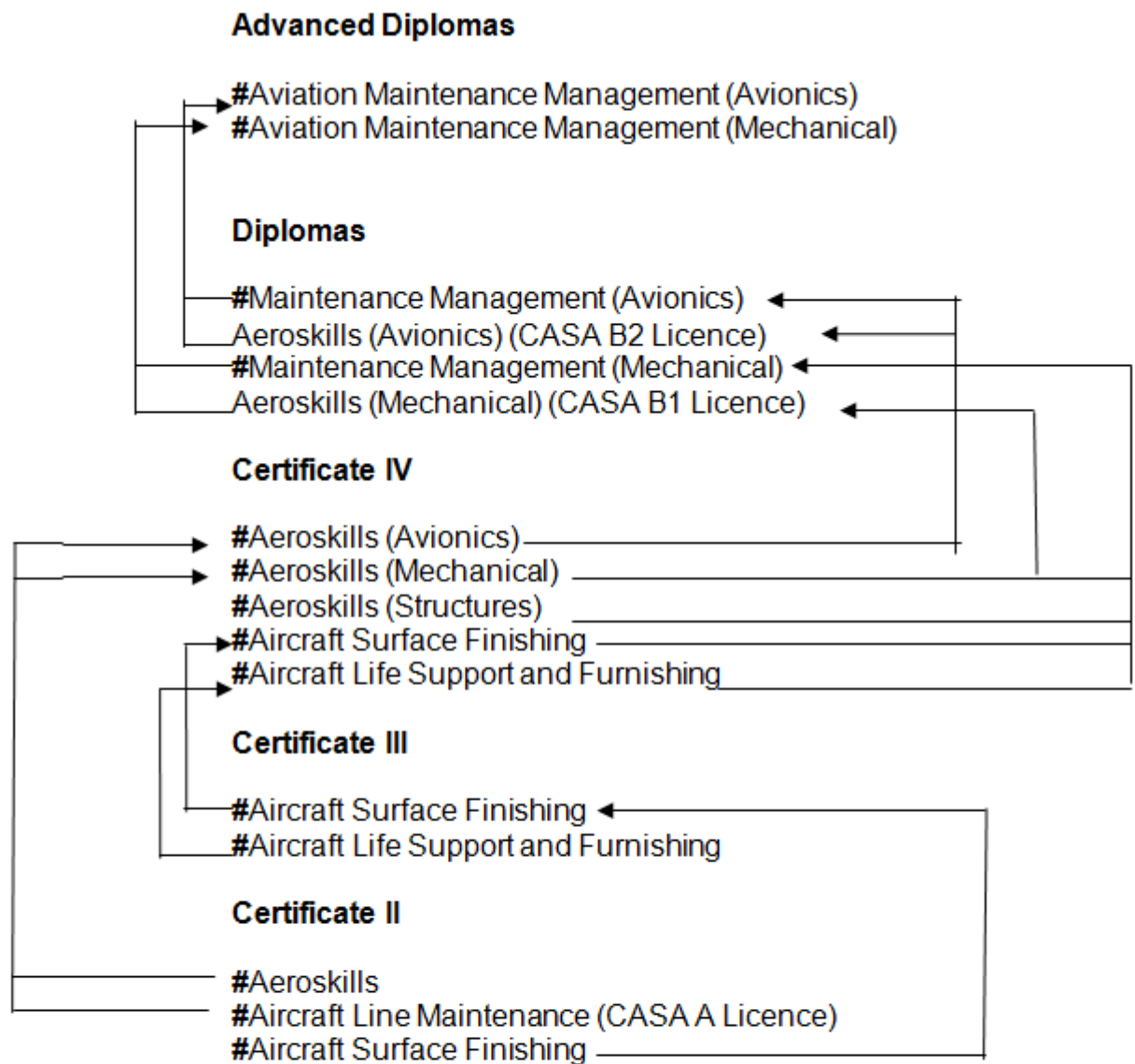
Structure and packaging rules

The two Advanced Diplomas of Aviation Maintenance Management consist of a number of common para-professional units that apply to both qualifications, plus some that are chosen according to the intended area of employment. In addition, there are a number of imported elective para-professional engineering units that are in either aeronautical or avionic specialist streams. Also provided are a number of preliminary units that must be attained where the individual is not articulating from other MEA07 Version 3 qualifications.

The structure of each qualification can be represented in a generic form as follows:

Applicable common units	+	Elective para-professional engineering units	=	Advanced Diploma of Aviation Maintenance Management

Pathways to a career and Aeroskills qualifications



Note: A pathway for Aeroskills (Armament) at Certificate IV is not shown because the qualification can at present be attained only through enlistment in the RAAF and career progression is entirely within the ADF

Skill Sets in this Training Package

Skill Sets

Definition

Skill sets are defined as single units of competency, or combinations of units of competency from an endorsed Training Package, which link to a licence or regulatory requirement, or defined industry need.

Wording on Statements of Attainment

Skill sets are a way of publicly identifying logical groupings of units of competency which meet an identified need or industry outcome. Skill sets are not qualifications.

Where skill sets are identified in a Training Package, the Statement of Attainment can set out the competencies a person has achieved in a way that is consistent and clear for employers and others. This is done by including the wording "these competencies meet [insert skill set title or identified industry area] need" on the Statement of Attainment. This wording applies only to skill sets that are formally identified as such in the endorsed Training Package. See the 2010 edition of the AQF Implementation Handbook for advice on wording on Statements of Attainment.
http://www.aqf.edu.au/Portals/0/Documents/Handbook/AQF_Handbook_07.pdf

Skill Sets in this Training Package

MEA07v3 Skill Sets

The MEA07v3 Skill Sets are in three sections that relate to their purpose, as follows:

- Section 1 contains Skill Sets applicable to individuals with relevant allied trade Certificate III or Certificate IV qualifications that provide competencies required for employment in aviation component maintenance workshops operating under either the Civil Aviation Safety Authority (CASA) or the Australian Defence Force (ADF) regulatory systems
- Section 2 contains Skill Sets that specify CASA requirements for the removal of exclusions from B1 and B2 aircraft maintenance engineer licences
- Section 3 contains Skill Sets that specify CASA requirements for the grant of maintenance authorisations to individuals working in CASR Part 145 or Part 42F maintenance organisations

Section 1 – Skill Sets for Employment in Aviation Maintenance Workshops

The Skill Sets in this section have been developed as a means of qualifying individuals from allied trades to work in specific areas of aircraft component repair and overhaul. They could also be used to qualify individuals with Aeroskills AME qualifications to work on component repair and overhaul. Allied trades are as follows:

- Allied trades related to avionic and electrical component work are electro-technology, telecommunications and automotive. A metals and engineering background may also qualify where competencies held and work experience is in the electrical and/or electronic fields.

- Allied trades related to mechanical component work are automotive and metals and engineering where competencies held and work experience is in mechanical maintenance fields.

Many of the units of competency listed in the Skill Sets have the following common core Aeroskills units as pre-requisites:

- MEA101B Interpret occupational health and safety practices in aviation maintenance
- MEA103B Plan and organise aviation maintenance work activity
- MEA105B Apply quality standards applicable to aviation maintenance processes
- MEA107B Interpret and use aviation maintenance industry manuals and specifications
- MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Much of the general content in these units is also covered by units that will be held by individuals in allied trades. To facilitate the movement of such individuals to aviation component workshop employment the parts of these units that are peculiar to Aeroskills have been identified and have been included in MEA145A Conversion from allied trades for employment in aviation maintenance workshops which is listed in each Skill Set. Through attainment of MEA145A individuals may be deemed to be competent in each of the listed common core units.

Avionics

- Electrical component repair/overhaul
- Mechanical and electro-mechanical instrument component repair/overhaul
- Aircraft display, control and distribution system component repair/overhaul
- Oxygen system component repair/overhaul
- Aircraft radio frequency communication and navigation system component repair/overhaul
- Aircraft pulse system component repair/overhaul
- Aircraft audio and visual system and reproducer repair/overhaul

Mechanical

- Mechanical system component repair/overhaul
- Hydraulic system component repair/overhaul
- Electro- hydraulic component repair/overhaul
- Pneumatic system component repair/overhaul
- Electro-pneumatic component repair/overhaul
- Fuel system component repair/overhaul
- Gas turbine engine air inlet and compressor module/component repair/overhaul
- Gas turbine engine combustion section module/component repair/overhaul
- Gas turbine engine turbine and exhaust module/component repair/overhaul
- Gas turbine engine ancillary section module/component repair/overhaul
- Piston engine repair/overhaul
- Propeller repair/overhaul
- Rotary wing dynamic component repair/overhaul

- Mechanical system component repair/overhaul
- Composite structure maintenance

Section 2 - Skill Sets for Removal of B1 and B2 Licence Exclusions

In the process of transitioning from the CAR 31 aircraft maintenance engineer licensing system to the new CASR Part 66 system many existing CAR 31 licence holders will be granted a B1 or B2 licence with a range of exclusions.

To provide a mechanism for the removal of these exclusions, the Skill Sets in this Section have been developed in consultation with CASA. For the purpose of exclusion removal, they must be delivered by RTOs that also hold Maintenance Training Organisation status under CASR Part 147.

CASA has also issued Airworthiness Advisory Circular AAC 9-66 in which it has been specified that CASA regards the grant of a B1 or B2 licence as signifying that all competencies relating to the specific licence privileges granted are held by the individual. Under these provisions, all holders of a B1 licence may be deemed to hold the following units of competency:

- MEA101B Interpret occupational health and safety practices in aviation maintenance
- MEA103B Plan and organise aviation maintenance work activity
- MEA105B Apply quality standards applicable to aviation maintenance processes
- MEA107B Interpret and use aviation maintenance industry manuals and specifications
- MEA108B Complete aviation maintenance industry documentation
- MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
- MEA301B Perform aircraft flight servicing

All holders of a B2 licence may be deemed to hold the following units of competency:

- MEA101B Interpret occupational health and safety practices in aviation maintenance
- MEA103B Plan and organise aviation maintenance work activity
- MEA105B Apply quality standards applicable to aviation maintenance processes
- MEA107B Interpret and use aviation maintenance industry manuals and specifications
- MEA108B Complete aviation maintenance industry documentation
- MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
- MEA201B Remove and install miscellaneous aircraft electrical hardware/components
- MEA246C Fabricate and/or repair aircraft electrical hardware or parts
- MEA260B Use electrical test equipment

For this reason, the above units are not listed against the Skill Sets where they are specified as pre-requisites for listed units.

Where any RPL action is required with regard to any of the units of competency listed in the Skill Sets in this Section, RTOs are encouraged to undertake an efficient RPL assessment (in line with CASA guidance in AAC9-66) to determine required gap training (if any) in order to provide an integrated learning program for the units in the applicable Skill Set.

- Electrical – B1.1 Licence Exclusions E1 and E4 Removal

- Electrical – B1.1 Licence Exclusions E1 and E4 Removal (when competencies are being gained on basic light aircraft with gas turbine engine)
- Electrical – B1.2, B1.3 or B1.4 Licence Exclusions E1 and E4 Removal
- Electrical – B1.2 or B1.4 Licence Exclusions E1 and E4 Removal (when competencies are being gained on basic light aircraft or helicopters)
- Electrical – B2 Licence Exclusions E1 and E4 Removal
- Electrical – B2 Licence Exclusions E1 and E4 Removal (when competencies are being gained on basic light aircraft or helicopters)
- Airframe – B1.1 Licence Exclusion E2 Removal
- Airframe – B1.1 Licence Exclusion E2 Removal (when competencies are being gained on basic light aircraft with gas turbine engine)
- Airframe – B1.2 Licence Exclusion E2 Removal
- Airframe – B1.2 Licence Exclusion E2 Removal (when competencies are being gained on basic light aircraft)
- Airframe – B1.3 and B1.4 Licence Exclusion E2 Removal
- Airframe – B1.4 Licence Exclusion E2 Removal (when competencies are being gained on basic helicopters)
- Power Plant – B1.1 Licence Exclusion E3 Removal
- Power Plant – B1.2 Licence Exclusion E3 Removal
- Power Plant – B1.2 Licence Exclusion E3 Removal (when competencies are being gained on basic light aircraft)
- Power Plant – B1.3 Licence Exclusion E3 Removal
- Power Plant – B1.4 Licence Exclusion E3 Removal
- Power Plant – B1.4 Licence Exclusion E3 Removal (when competencies are being gained on basic helicopters)
- Instrument – B1 Licence Exclusions E5 and E7 Removal
- Instrument – B1.2 and 1.4 Licence Exclusions E5 and E7 Removal (when competencies are being gained on basic light aircraft or helicopters)
- Instrument – B2 Licence Exclusions E5 and E7 Removal
- Instrument and Radio – B1 Licence Exclusion E6 Removal
- Instrument and Radio – B1.2 and 1.4 Licence Exclusion E6 Removal (when competencies are being gained on basic light aircraft or helicopters)
- Instrument and Radio – B2 Licence Exclusion E6 Removal
- Instrument and Radio – B2 Licence Exclusion E6 Removal (Non-Type Rated Aircraft and Helicopters Only)
- Radio – B1 Licence Exclusion E8 Removal
- Radio – B1.2 and 1.4 Licence Exclusion E8 Removal (when competencies are being gained on basic light aircraft or helicopters)
- Radio – B2 Licence Exclusion E8 Removal
- Radio – B2 Licence Exclusion E8 Removal (when competencies are being gained on non-type rated aircraft and helicopters)
- Airframe – B1 Licence Exclusion E9 Removal
- Airframe – B1 Licence Exclusion E10 Removal
- Radio – B2 Licence Exclusion E11 Removal

- Airframe/Engine – B1.1 and 1.2 Licence Exclusion E12 Removal
- Airframe – B1 Licence Exclusion E13 Removal
- Airframe – B1 Licence Exclusion E14 Removal
- Airframe – B1.1 and 1.3 Licence Exclusion E15 Removal
- Airframe – B1.1 Licence Exclusion E15 Removal
- Airframe – B1.1 Licence Exclusion E16 Removal
- Airframe – B1.2 Licence Exclusion E16 Removal
- Radio – B2 Licence Exclusion E18 Removal
- Radio – B2 Licence Exclusion E19 Removal
- Radio – B2 Licence Exclusion E20 Removal
- Radio – B2 Licence Exclusion E21 Removal
- Radio – B2 Licence Exclusion E22 Removal
- Radio – B2 Licence Exclusion E23 Removal
- Radio – B2 Licence Exclusion E24 Removal
- Radio – B2 Licence Exclusion E25 Removal
- Radio – B2 Licence Exclusion E26 Removal
- Instrument – B2 Licence Exclusion E27 Removal
- Instrument – B2 Licence Exclusion E28 Removal
- Instrument – B2 Licence Exclusion E29 Removal
- Instrument – B2 Licence Exclusion E30 Removal
- Instrument – B2 Licence Exclusion E31 Removal
- Electrical – B2 Licence Exclusion E32 Removal
- Engine – B1.2 or 1.4 Licence Exclusion E33 Removal

Section 3 – Skill Sets for Individual Maintenance Authorisations

- Aircraft egress system maintenance
- In-flight entertainment system maintenance
- Borescope inspection approval

Employability Skills

Employability Skills replacing Key Competency information from 2006

In May 2005, the approach to incorporate Employability Skills within Training Package qualifications and units of competency was endorsed. As a result, from 2006 Employability Skills will progressively replace Key Competency information in Training Packages.

Background to Employability Skills

Employability Skills are also sometimes referred to as generic skills, capabilities or Key Competencies. The Employability Skills discussed here build on the Mayer Committee's Key Competencies, which were developed in 1992 and attempted to describe generic competencies for effective participation in work.

The Business Council of Australia (BCA) and the Australian Chamber of Commerce and Industry (ACCI), produced the *Employability Skills for the Future* report in 2002 in consultation with other peak employer bodies and with funding provided by the Department of Education, Science and Training (DEST) and the Australian National Training Authority (ANTA). Officially released by Dr Nelson (Minister for Education, Science and Training) on 23 May 2002, copies of the report are available from the DEST website at: http://www.dest.gov.au/archive/ty/publications/employability_skills/index.htm.

The report indicated that business and industry now require a broader range of skills than the Mayer Key Competencies Framework and featured an Employability Skills Framework identifying eight Employability Skills*:

- communication
- teamwork
- problem solving
- initiative and enterprise
- planning and organising
- self-management
- learning
- technology.

The report demonstrated how Employability Skills can be further described for particular occupational and industry contexts by sets of facets. The facets listed in the report are the aspects of the Employability Skills that the sample of employers surveyed identified as being important work skills. These facets were seen by employers as being dependent both in their nature and priority on an enterprise's business activity.

*Personal attributes that contribute to employability were also identified in the report but are not part of the Employability Skills Framework.

Employability Skills Framework

The following table contains the Employability Skills facets identified in the report *Employability Skills for the Future*.

Skill	Facets
	Aspects of the skill that employers identify as important. The nature and application of these facets will vary depending on industry and job type.
Communication that contributes to productive	• listening and understanding • speaking clearly and directly

and harmonious relations across employees and customers	• writing to the needs of the audience • negotiating responsively • reading independently • empathising • using numeracy effectively • understanding the needs of internal and external customers • persuading effectively • establishing and using networks • being assertive • sharing information • speaking and writing in languages other than English
Teamwork that contributes to productive working relationships and outcomes	• working across different ages irrespective of gender, race, religion or political persuasion • working as an individual and as a member of a team • knowing how to define a role as part of the team • applying teamwork to a range of situations e.g. futures planning and crisis problem solving • identifying the strengths of team members • coaching and mentoring skills, including giving feedback
Problem solving that contributes to productive outcomes	• developing creative, innovative and practical solutions • showing independence and initiative in identifying and solving problems • solving problems in teams • applying a range of strategies to problem solving • using mathematics, including budgeting and financial management to solve problems • applying problem-solving strategies

	across a range of areas • testing assumptions, taking into account the context of data and circumstances • resolving customer concerns in relation to complex project issues
Initiative and enterprise that contribute to innovative outcomes	• adapting to new situations • developing a strategic, creative and long-term vision • being creative • identifying opportunities not obvious to others • translating ideas into action • generating a range of options • initiating innovative solutions
Planning and organising that contribute to long and short-term strategic planning	• managing time and priorities - setting time lines, coordinating tasks for self and with others • being resourceful • taking initiative and making decisions • adapting resource allocations to cope with contingencies • establishing clear project goals and deliverables • allocating people and other resources to tasks • planning the use of resources, including time management • participating in continuous improvement and planning processes • developing a vision and a proactive plan to accompany it
	• predicting - weighing up risk, evaluating alternatives and applying evaluation criteria • collecting, analysing and organising information • understanding basic business systems and their relationships

Self-management that contributes to employee satisfaction and growth	• having a personal vision and goals • evaluating and monitoring own performance • having knowledge and confidence in own ideas and visions • articulating own ideas and visions • taking responsibility
Learning that contributes to ongoing improvement and expansion in employee and company operations and outcomes	• managing own learning • contributing to the learning community at the workplace • using a range of mediums to learn - mentoring, peer support and networking, IT and courses • applying learning to technical issues (e.g. learning about products) and people issues (e.g. interpersonal and cultural aspects of work) • having enthusiasm for ongoing learning • being willing to learn in any setting - on and off the job • being open to new ideas and techniques • being prepared to invest time and effort in learning new skills • acknowledging the need to learn in order to accommodate change
designed by trainers and assessors after analysis at the unit level). • Employability Skills Summaries contain information that may also assist in building learners' understanding of industry and workplace expectations. Technology that contributes to the effective carrying out of tasks	• having a range of basic IT skills • applying IT as a management tool • using IT to organise data • being willing to learn new IT skills • having the OHS knowledge to apply technology • having the appropriate physical capacity

Employability Skills Summary

An Employability Skills Summary exists for each qualification. Summaries provide a lens through which to view Employability Skills at the qualification level and capture the key aspects or facets of the Employability Skills that are important to the job roles covered by the qualification. Summaries are designed to assist trainers and assessors to identify and include important industry application of Employability Skills in learning and assessment strategies.

The following is important information for trainers and assessors about Employability Skills Summaries.

- Employability Skills Summaries provide examples of how each skill is applicable to the job roles covered by the qualification.
- Employability Skills Summaries contain general information about industry context which is further explained as measurable outcomes of performance in the units of competency in each qualification.
- The detail in each Employability Skills Summary will vary depending on the range of job roles covered by the qualification in question.
- Employability Skills Summaries are not exhaustive lists of qualification requirements or checklists of performance (which are separate assessment tools that should be designed by trainers and assessors after analysis at the unit level).
- Employability Skills Summaries contain information that may also assist in building learners' understanding of industry and workplace expectations.

Industry Requirements for Employability Skills

Aviation maintenance involves dealing with a wide range of technology in a highly regulated environment and consistently working to high standards in order to ensure flight safety. There is therefore a particular emphasis on all areas of employability skills. For example, communication skills are vital to being able to operate in a highly regulated environment with extensive work recording and reporting environments and problem solving across a range of technologies is vital. Also, with ongoing mandatory training associated with many types of aircraft learning a high level of personal commitment thereto is essential.

Assessment Guidelines

Introduction

These Assessment Guidelines provide the endorsed framework for assessment of units of competency in this Training Package. They are designed to ensure that assessment is consistent with the *Australian Quality Training Framework (AQTF) Essential Standards for Initial and Continuing Registration*. Assessments against the units of competency in this Training Package must be carried out in accordance with these Assessment Guidelines.

Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing/registration requirements; and assessment pathways.

Quality assessment underpins the credibility of the vocational education and training sector. The Assessment Guidelines of a Training Package are an important tool in supporting quality assessment.

Assessment within the National Skills Framework is the process of collecting evidence and making judgements about whether competency has been achieved to confirm whether an individual can perform to the standards expected in the workplace, as expressed in the relevant endorsed unit of competency.

Assessment must be carried out in accordance with the:

- benchmarks for assessment
- specific industry requirements
- principles of assessment
- rules of evidence
- assessment requirements set out in the AQTF

Benchmarks for Assessment

The endorsed units of competency in this Training Package are the benchmarks for assessment. As such, they provide the basis for nationally recognised Australian Qualifications Framework (AQF) qualifications and Statements of Attainment issued by Registered Training Organisations (RTOs).

Principles of Assessment

All assessments carried out by RTOs are required to demonstrate compliance with the principles of assessment:

validity
reliability
flexibility
fairness
sufficiency

These principles must be addressed in the:

design, establishment and management of the assessment system for this Training Package development of assessment tools, and the conduct of assessment.

Validity

Assessment is valid when the process is sound and assesses what it claims to assess. Validity requires that:

(a)	assessment against the units of competency must cover the broad range of skills and

	knowledge that are essential to competent performance
(b)	assessment of knowledge and skills must be integrated with their practical application
(c)	judgement of competence must be based on sufficient evidence (that is, evidence gathered on a number of occasions and in a range of contexts using different assessment methods). The specific evidence requirements of each unit of competency provide advice on sufficiency

Reliability

Reliability refers to the degree to which evidence presented for assessment is consistently interpreted and results in consistent assessment outcomes. Reliability requires the assessor to have the required competencies in assessment and relevant vocational competencies (or to assess in conjunction with someone who has the vocational competencies). It can only be achieved when assessors share a common interpretation of the assessment requirements of the unit(s) being assessed.

Flexibility

To be flexible, assessment should reflect the candidate's needs; provide for recognition of competencies no matter how, where or when they have been acquired; draw on a range of methods appropriate to the context, competency and the candidate; and support continuous competency development.

Fairness

Fairness in assessment requires consideration of the individual candidate's needs and characteristics, and any reasonable adjustments that need to be applied to take account of them. It requires clear communication between the assessor and the candidate to ensure that the candidate is fully informed about, understands and is able to participate in, the assessment process, and agrees that the process is appropriate. It also includes an opportunity for the person being assessed to challenge the result of the assessment and to be reassessed if necessary.

Sufficiency

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency. Sufficiency is also one of the rules of evidence.

Rules of Evidence

The rules of evidence guide the collection of evidence that address the principles of validity and reliability, guiding the collection of evidence to ensure that it is valid, sufficient, current and authentic.

Valid

Valid evidence must relate directly to the requirements of the unit of competency. In ensuring evidence is valid, assessors must ensure that the evidence collected supports demonstration of the outcomes and performance requirements of the unit of competency together with the knowledge and skills necessary for competent performance. Valid evidence must encapsulate the breadth and depth of the unit of competency, which will necessitate using a number of different assessment methods.

Sufficient

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency.

Current

In assessment, currency relates to the age of the evidence presented by a candidate to demonstrate that they are still competent. Competency requires demonstration of current performance, so the evidence collected must be from either the present or the very recent past.

Authentic

To accept evidence as authentic, an assessor must be assured that the evidence presented for assessment is the candidate's own work.

Assessment Requirements of the Australian Quality Training Framework

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirements of the AQTF as expressed in the AQTF 2010 *Essential Standards for Registration*.

The AQTF 2010 *Essential Standards for Initial and Continuing Registration* can be downloaded from < www.training.com.au >.

The following points summarise the assessment requirements.

Registration of Training Organisations

Assessment must be conducted by, or on behalf of, an RTO formally registered by a State or Territory Registering Body in accordance with the AQTF. The RTO must have the specific units of competency and/or AQF qualifications on its scope of registration.

Quality Training and Assessment

Each RTO must provide quality training and assessment across all its operations. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*, Standard 1.

Assessor Competency Requirements

Each person involved in training, assessment or client service must be competent for the functions they perform. AQTF 2010 *Essential Standards for Initial and Continuing Registration*, Standard 1 for assessor (and trainer) competency requirements. See also the AQTF 2010 *Users' Guide to the Essential Standards for Registration* Appendix 2.

Assessment Requirements

The RTOs assessments, including RPL, must meet the requirements of the relevant endorsed Training Package. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Assessment Strategies

Each RTO must have strategies for training and assessment that meet the requirements of the relevant Training Package or accredited course and are developed in consultation with industry stakeholders. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

National Recognition

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Access and Equity and Client Outcomes

Each RTO must adhere to the principles of access and equity and maximise outcomes for its clients. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Monitoring Assessments

Training and/or assessment provided on behalf of the RTO must be monitored to ensure that it is in accordance with all aspects of the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Recording Assessment Outcomes

Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Issuing AQF Qualifications and Statements of Attainment

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the current AQF Implementation Handbook and the endorsed Training Packages within the scope of its registration. An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package are met. A Statement of Attainment is issued when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). See the AQTF and the edition of the AQF Implementation Handbook-available on the AQF Council website < www.aqf.edu.au >.

Licensing/Registration Requirements

This section provides information on licensing/registration requirements for this Training Package, with the following important disclaimer.

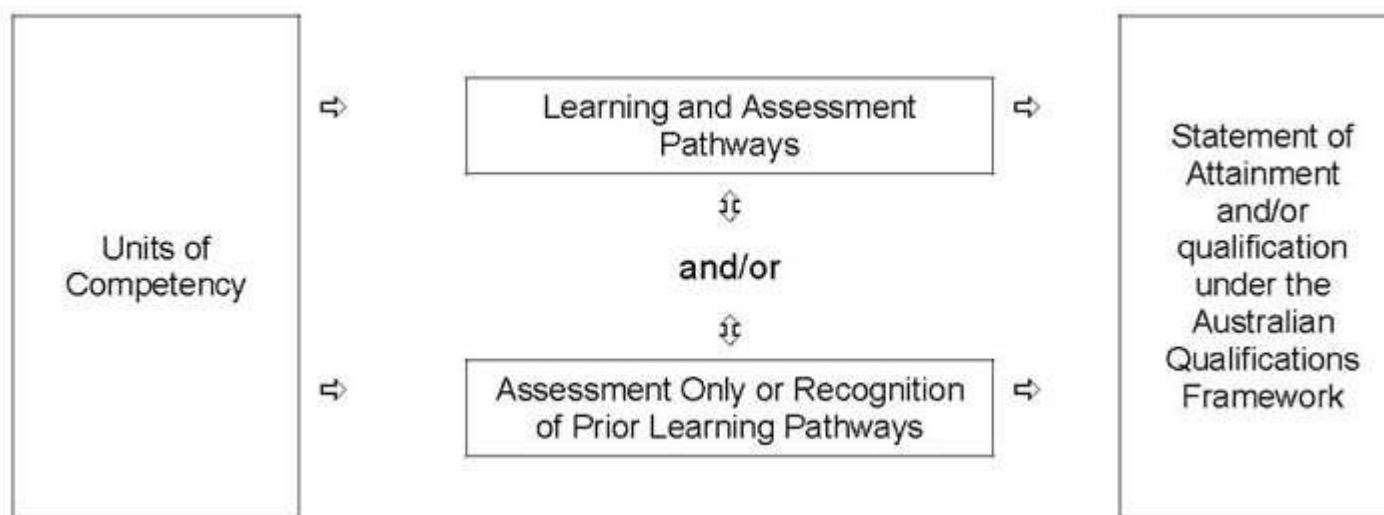
The developers of this Training Package, and DEST, consider that no licensing or registration requirements apply to RTOs, assessors or candidates with respect to this Training Package. Contact the relevant State or Territory Department(s) to check if there are any licensing or registration requirements with which you must comply. For further information on this topic contact Manufacturing Industry Skills Council (<http://www.mskills.com.au>).

Pathways

The competencies in this Training Package may be attained in a number of ways including through:

- formal or informal education and training
- experiences in the workplace
- general life experience, and/or
- any combination of the above.

Assessment under this Training Package leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, an assessment-only or recognition pathway, or a combination of the two as illustrated in the following diagram.



Each of these assessment pathways leads to full recognition of competencies held - the critical issue is that the candidate is competent, not how the competency was acquired.

Assessment, by any pathway, must comply with the assessment requirements set out in the Assessment Guidelines of the Training Package, and the AQTF, 2 where relevant, the Australian Qualifications Framework.

Learning and Assessment Pathways

Usually, learning and assessment are integrated, with assessment evidence being collected and feedback provided to the candidate at anytime throughout the learning and assessment process.

Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be: group-based, work-based, project-based, self-paced, action learning-based; conducted by distance or e-learning; and/or involve practice and experience in the workplace.

Learning and assessment pathways to suit Australian Apprenticeships have a mix of formal structured training and structured workplace experience with formative assessment activities through which candidates can acquire and demonstrate skills and knowledge from the relevant units of competency.

Credit Pathways

Credit is the value assigned for the recognition of equivalence in content between different types of learning and/or qualifications which reduces the volume of learning required to achieve a qualification.

Credit arrangements must be offered by all RTOs that offer Training Package qualifications. Each RTO must have a systematic institutional approach with clear, accessible and transparent policies and procedures.

Competencies already held by individuals can be formally assessed against the units of competency in this Training Package, and should be recognised regardless of how, when or where they were acquired, provided that the learning is relevant to the unit of competency outcomes.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is an assessment process which determines the credit outcomes of an individual application for credit.

The availability of Recognition of Prior Learning (RPL) provides all potential learners with access to credit opportunities.

The recognition of prior learning pathway is appropriate for candidates who have previously attained skills and knowledge and who, when enrolling in qualifications, seek to shorten the duration of their training and either continue or commence working. This may include the following groups of people:

existing workers; individuals with overseas qualifications; recent migrants with established work histories; people returning to the workplace; and people with disabilities or injuries requiring a change in career.

As with all assessment, RPL assessment should be undertaken by academic or teaching staff with expertise in the subject, content of skills area, as well as knowledge of and expertise in RPL assessment policies and procedures.

Assessment methods used for RPL should provide a range of ways for individuals to demonstrate that they have met the required outcomes and can be granted credit. These might include:

questioning (oral or written) consideration of a portfolio and review of contents consideration of third party reports and/or other documentation such as documentation such as articles, reports, project material, papers, testimonials or other products prepared by the RPL applicant that relate to the learning outcomes of the relevant qualification component mapping of learning outcomes from prior formal or non-formal learning to the relevant qualification components

observation of performance, and participation in structured assessment activities the individual would normally be required to undertake if they were enrolled in the qualification component/s.

In a Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency against the relevant unit of competency. This process may be directed by the candidate and verified by the assessor. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of the AQTF must be met.

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed unit of competency. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients, work samples and/or observation of the candidate. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence of prior learning is:

authentic (the candidate's own work); valid (directly related to the current version of the relevant endorsed unit of competency); reliable (shows that the candidate consistently meets the endorsed unit of competency); current (reflects the candidate's current capacity to perform the aspect of the work covered by the endorsed unit of competency); and sufficient (covers the full range of elements in the relevant unit of competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills, and job/role environment skills).

Credit Transfer

Credit transfer is a process which provides learners with agreed and consistent credit outcomes based on equivalences in content between matched qualifications.

This process involves education institutions:

mapping, comparing and evaluating the extent to which the defined learning outcomes and assessment requirements of the individual components of one qualification are equivalent to the learning outcomes and assessment requirements of the individual components of another qualification making an educational judgment of the credit outcomes to be assigned between the matched components of the two qualifications setting out the agreed credit outcomes in a documented arrangement or agreement, and publicising the arrangement/agreement and credit available.

Combination of Pathways

Credit may be awarded on the basis of a combination of credit transfer plus an individual RPL assessment for additional learning. Once credit has been awarded on the basis of RPL, subsequent credit transfer based on these learning outcomes should not include revisiting the RPL assessment but should be based on credit transfer or articulation or other arrangements between providers.

Where candidates for assessment have gained competencies through work and life experience and gaps in their competence are identified, or where they require training in new areas, a combination of pathways may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competency. Once current competency is identified, a structured learning and assessment program ensures that the candidate acquires the required additional competencies identified as gaps.

Assessor Requirements

This section identifies the specific requirements on the vocational competence and

experience for assessors, to ensure that they meet the needs of industry and their obligations under AQTF, and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies.

Assessor Competencies

The AQTF specifies mandatory competency requirements for assessors. For information, Element 1.4 from the AQTF 2007 *Essential Standards for Registration* follows:

1.4		Training and assessment is delivered by trainers and assessors who:
	a)	have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and
	b)	have the relevant vocational competencies at least to the level being delivered or assessed, and
	c)	can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and
	d)	continue developing their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence.
		* See AQTF 2010 <i>Users' Guide to the Essential Standards for Registration</i> Appendix 2

Designing Assessment Tools

This section provides an overview on the use and development of assessment tools.

Use of Assessment Tools

Assessment tools provide a means of collecting the evidence that assessors use in making judgments about whether candidates have achieved competency.

There is no set format or process for the design, production or development of assessment tools. Assessors may use prepared assessment tools, such as those specifically developed to support this Training Package, or they may develop their own.

Using Prepared Assessment Tools

If using prepared assessment tools, assessors should ensure these relate to the current version of the relevant unit of competency. The current unit of competency can be checked on the National Register < www.ntis.gov.au >.

Developing Assessment Tools

When developing assessment tools, assessors must ensure that they:

- are benchmarked against the relevant unit or units of competency
- are reviewed as part of the continuous improvement of assessment strategies as required under Standard 1 of the AQTF 2007
- meet the assessment requirements expressed in Standard 1 of the AQTF 2010

Essential Standards for Initial and Continuing Registration.

A key reference for assessors developing assessment tools is TAE10 Training and Education Training Package.

Language, Literacy and Numeracy

The design of assessment tools must reflect the language, literacy and numeracy competencies required for the performance of a task in the workplace and not exceed these expectations.

Conducting Assessment

This section details the mandatory assessment requirements and provides information on equity in assessment including reasonable adjustment.

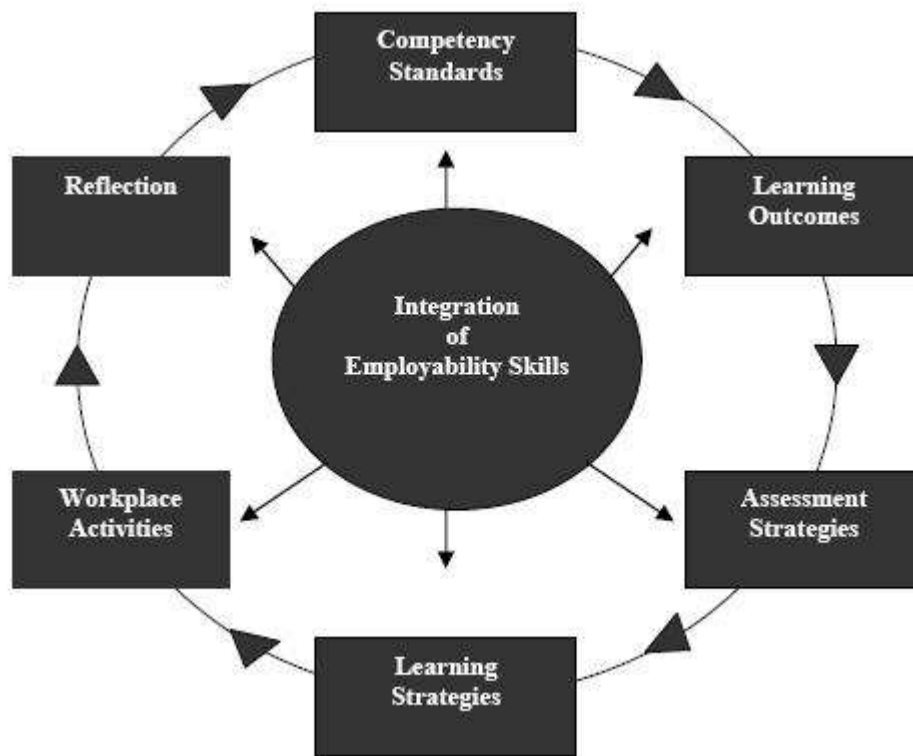
Mandatory Assessment Requirements

Assessments must meet the criteria set out in the 2010 *Essential Standards for Initial and Continuing Registration*. For information, the mandatory assessment requirements from Standard 1 from the AQTF 2010 *Essential Standards for Initial and Continuing Registration* are as follows:

1.5	Assessment, including Recognition of Prior Learning:
a)	meets the requirements of the relevant Training Package or accredited course,
b)	is conducted in accordance with the principles of assessment and the rules of evidence, and
c)	meets workplace and, where relevant, regulatory requirements.
d)	is systematically validated.

Assessment of Employability Skills

Employability Skills are integral to workplace competency. As such they must be considered in the design, customisation, delivery and assessment of vocational education and training programs in an integrated and holistic way, as represented diagrammatically below.



Employability Skills are embedded and explicit within each unit of competency, and an Employability Skills Summary is available for each qualification. Training providers must use Employability Skills information in order to design valid and reliable training and assessment strategies. This analysis could include:

- reviewing units of competency to locate relevant Employability Skills and determine how they are applied within the unit
- analysing the Employability Skills Summary for the qualification in which the unit or units are packaged to help clarify relevant industry and workplace contexts and the application of Employability Skills at that qualification outcome
- designing training and assessment to address Employability Skills requirements.

The National Quality Council has endorsed a model for assessing and reporting Employability Skills, which contains further suggestions about good practice strategies in teaching, assessing, learning and reporting Employability Skills. The model is available from < <http://www.training.com.au/>>.

The endorsed approach includes learners downloading qualification specific Employability Skills Summaries for Training Package qualifications from an online repository at < <http://employabilityskills.training.com.au>>

For more information on Employability Skills in Manufacturing Industry Skills Council Training

Packages go to the Manufacturing Industry Skills Council website at <http://www.mskills.com.au>. Employability Skills are reported on each qualification using the following statement on the

qualification testamur: "A summary of the Employability Skills developed through this qualification can be downloaded from <http://employabilityskills.training.com.au> "

Access and Equity

An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package: training and assessment must be bias-free.

Under the rules for their development, Training Packages must reflect and cater for the increasing diversity of Australia's VET clients and Australia's current and future workforce. The flexibilities offered by Training Packages should enhance opportunities and potential outcomes for all people so that we can all benefit from a wider national skills base and a shared contribution to Australia's economic development and social and cultural life.

Reasonable adjustments

It is important that education providers take meaningful, transparent and reasonable steps to consult, consider and implement reasonable adjustments for students with disability.

Under the *Disability Standards for Education 2005*, education providers must make reasonable adjustments for people with disability to the maximum extent that those adjustments do not cause that provider unjustifiable hardship. While "reasonable adjustment" and "unjustifiable hardship" are different concepts and involve different considerations, they both seek to strike a balance between the interests of education providers and the interests of students with and without disability.

An adjustment is any measure or action that a student requires because of their disability, and which has the effect of assisting the student to access and participate in education and

training on the same basis as students without a disability. An adjustment is reasonable if it achieves this purpose while taking into account factors such as the nature of the student's disability, the views of the student, the potential effect of the adjustment on the student and others who might be affected, and the costs and benefits of making the adjustment.

An education provider is also entitled to maintain the academic integrity of a course or program and to consider the requirements or components that are inherent or essential to its nature when assessing whether an adjustment is reasonable. There may be more than one adjustment that is reasonable in a given set of circumstances; education providers are required to make adjustments that are reasonable and that do not cause them unjustifiable hardship.

The Training Package Guidelines provides more information on reasonable adjustment, including examples of adjustments. Go to <http://www.deewr.gov.au/tpdh/Pages/home.aspx>.

Further Sources of Information

The section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing of assessments against this Training Package.

Contacts

Technical and Vocational Education and Training (TVET) Australia Limited

Level 21, 390 St Kilda Road, Melbourne VIC 3150

PO Box 12211, A"Beckett Street Post Office

Melbourne Victoria 8006

Ph: +61 3 9832 8100

Fax: +61 3 9832 8198

Email: sales@tvetaustralia.com.au

Web: www.tvetaustralia.com.au

For information on the TAE10 Training and Education Training Package contact: Innovation & Business Skills Australia

Telephone: (03) 9815 7000

Facsimile: (03) 9815 7001

Email: virtual@ibsa.org.au

Web: www.ibsa.org.au

General Resources

AQF Implementation Handbook, Fourth Edition 2007. Australian Qualifications Framework Advisory Board, 2002 < www.aqf.edu.au>

Australian Quality Training Framework (AQTF) and AQTF 2010 Users" Guide to the Essential Standards for Registration

<http://www.training.com.au/pages/menuitem5cbe14d51b49dd34b225261017a62dbc.aspx>

For general information and resources go to <http://www.training.com.au/>

The National Register is an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses - < www.ntis.gov.au>

The Training Package Development Handbook site provides National Quality Council policy for the development of Training Packages. The site also provides guidance material for the application of that policy, and other useful information and links.

<http://www.deewr.gov.au/Skills/Overview/Policy/TPDH/Pages/main.aspx>

Assessment Resources

Registered training organisations (RTOs) are at the forefront of vocational education and training (VET) in Australia. They translate the needs of industry into relevant, quality, client-focussed training and assessment.

RTOs should strive for innovation in VET teaching and learning practices and develop highly flexible approaches to assessment which take cognisance of specific needs of learners, in order to improve delivery and outcomes of training.

Resources can be purchased or accessed from: TVET Australia provides an integrated service to enable users of the national training

system to identify and acquire training materials, identify copyright requirements and enter licenses for use of that material consistent with the scope and direction of the NQC.

<http://www.productservices.tvetaustralia.com.au/>

Competency Standards

What is competency?

The broad concept of industry competency concerns the ability to perform particular tasks and duties to the standard of performance expected in the workplace. Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.

Competency covers all aspects of workplace performance and involves performing individual tasks; managing a range of different tasks; responding to contingencies or breakdowns; and, dealing with the responsibilities of the workplace, including working with others. Workplace competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time and in the required workplace situations and environments. In line with this concept of competency Training Packages focus on what is expected of a competent individual in the workplace as an outcome of learning, rather than focussing on the learning process itself.

Competency standards in Training Packages are determined by industry to meet identified industry skill needs. Competency standards are made up of a number of units of competency each of which describes a key function or role in a particular job function or occupation. Each unit of competency within a Training Package is linked to one or more AQF qualifications.

Contextualisation of Units of Competency by RTOs

Registered Training Organisation (RTOs) may contextualise units of competency to reflect local outcomes required. Contextualisation could involve additions or amendments to the unit of competency to suit particular delivery methods, learner profiles, specific enterprise equipment requirements, or to otherwise meet local needs. However, the integrity of the overall intended outcome of the unit of competency must be maintained.

Any contextualisation of units of competency in this endorsed Training Package must be within the bounds of the following advice. In contextualising units of competency, RTOs:

- must not remove or add to the number and content of elements and performance criteria
- may add specific industry terminology to performance criteria where this does not distort or narrow the competency outcomes
- may make amendments and additions to the range statement as long as such changes do not diminish the breadth of application of the competency and reduce its portability, and/or
- may add detail to the evidence guide in areas such as the critical aspects of evidence or resources and infrastructure required where these expand the breadth of the competency but do not limit its use.

Components of Units of Competency

The components of units of competency are summarised below, in the order in which they appear in each unit of competency.

Unit Title

The unit title is a succinct statement of the outcome of the unit of competency. Each unit of competency title is unique, both within and across Training Packages.

Unit Descriptor

The unit descriptor broadly communicates the content of the unit of competency and the skill area it addresses. Where units of competency have been contextualised from units of competency from other endorsed Training Packages, summary information is provided. There may also be a brief second paragraph that describes its relationship with other units of competency, and any licensing requirements.

Employability Skills statement

A standard Employability Skills statement appears in each unit of competency. This statement directs trainers and assessors to consider the information contained in the Employability Skills Summary in which the unit of competency is packaged.

Prerequisite Units (optional)

If there are any units of competency that must be completed before the unit, these will be listed.

Application of the Unit

This sub-section fleshes out the unit of competency's scope, purpose and operation in different contexts, for example, by showing how it applies in the workplace.

Competency Field (Optional)

The competency field either reflects the way the units of competency are categorised in the Training Package or denotes the industry sector, specialisation or function. It is an optional component of the unit of competency.

Sector (optional)

The industry sector is a further categorisation of the competency field and identifies the next classification, for example an elective or supervision field.

Elements of Competency

The elements of competency are the basic building blocks of the unit of competency. They describe in terms of outcomes the significant functions and tasks that make up the competency.

Performance Criteria

The performance criteria specify the required performance in relevant tasks, roles, skills and in the applied knowledge that enables competent performance. They are usually written in passive voice. Critical terms or phrases may be written in bold italics and then defined in range statement, in the order of their appearance in the performance criteria.

Required Skills and Knowledge

The essential skills and knowledge are either identified separately or combined. Knowledge identifies what a person needs to know to perform the work in an informed and effective manner. Skills describe the application of knowledge to situations where understanding is converted into a workplace outcome.

Range Statement

The range statement provides a context for the unit of competency, describing essential operating conditions that may be present with training and assessment, depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. As applicable, the meanings of key terms used in the performance criteria will also be explained in the range statement.

Evidence Guide

The evidence guide is critical in assessment as it provides information to the Registered Training Organisation (RTO) and assessor about how the described competency may be demonstrated. The evidence guide does this by providing a range of evidence for the assessor to make determinations, and by providing the assessment context. The evidence guide describes:

- conditions under which competency must be assessed including variables such as the assessment environment or necessary equipment
- relationships with the assessment of any other units of competency
- suitable methodologies for conducting assessment including the potential for workplace simulation
- resource implications, for example access to particular equipment, infrastructure or situations
- how consistency in performance can be assessed over time, various contexts and with a range of evidence, and expectations at the AQF qualification level involved

Employability Skills in units of competency

The detail and application of Employability Skills facets will vary according to the job-role requirements of each industry. In developing Training Packages, industry stakeholders are consulted to identify appropriate facets of Employability Skills which are incorporated into the relevant units of competency and qualifications.

Employability Skills are not a discrete requirement contained in units of competency (as was the case with Key Competencies). Employability Skills are specifically expressed in the context of the work outcomes described in units of competency and will appear in elements, performance criteria, range statements and evidence guides. As a result, users of Training Packages are This Training Package seeks to ensure that industry-endorsed Employability Skills are explicitly embedded in units of competency. The application of each skill and the level of detail included in each part of the unit will vary according to industry requirements and the nature of the unit of competency.

Employability Skills must be both explicit and embedded within units of competency. This means that Employability Skills will be:

- embedded in units of competency as part of the other performance requirements that make up the competency as a whole
- explicitly described within units of competency to enable Training Packages users to identify accurately the performance requirements of each unit with regards to Employability Skills.

This Training Package also seeks to ensure that Employability Skills are well-defined and written into units of competency so that they are apparent, clear and can be delivered and assessed as an essential component of unit work outcomes.

The following table contains examples of embedded Employability Skills for each component of a unit of competency. Please note that in the examples below the bracketed skills are provided only for clarification and will not be present in units of competency within this Training Package.

Example Employability Skills unit

Unit component	Example of embedded Employability Skill
Unit Title	Test and troubleshoot aircraft electrical systems and components (Problem Solving and Technology)
Unit Descriptor	It covers the competencies required to correctly interpret and apply CASA airworthiness and certification requirements during aircraft maintenance. (Communication)
Element	Identify task requirements. (Planning and Organising)
Performance Criteria	Work individually or as a team member to complete maintenance tasks in a timely manner and in accordance with enterprise procedures and requirements. (Communication, Teamwork, Initiative and Enterprise and Self Management)
Range Statement	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level. (Communication and Problem Solving)
Required Skills and Knowledge	Applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate electrical system malfunctions of the above components and systems (Problem Solving, Communication and Technology)

required to review the entire unit of competency in order to accurately determine Employability Skills requirements.

How Employability Skills relate to the Key Competencies

The eight nationally agreed Employability Skills now replace the seven Key Competencies in Training Packages. Trainers and assessors who have used Training Packages prior to the introduction of Employability Skills may find the following comparison useful.

Employability Skills	Mayer Key Competencies

Communication	Communicating ideas and information
Teamwork	Working with others and in teams
Problem solving	Solving problems Using mathematical ideas and techniques
Initiative and enterprise	
Planning and organising	Collecting, analysing and organising information Planning and organising activities
Self-management	
Learning	
Technology	Using technology

When analysing the above table it is important to consider the relationship and natural overlap of Employability Skills. For example, using technology may involve communication skills and combine the understanding of mathematical concepts.

Explicitly embedding Employability Skills in units of competency

This Training Package seeks to ensure that industry-endorsed Employability Skills are explicitly embedded in units of competency. The application of each skill and the level of detail included in each part of the unit will vary according to industry requirements and the nature of the unit of competency.

Employability Skills must be both explicit and embedded within units of competency. This means that Employability Skills will be:

- embedded in units of competency as part of the other performance requirements that make up the competency as a whole
- explicitly described within units of competency to enable Training Packages users to identify accurately the performance requirements of each unit with regards to Employability Skills.

This Training Package also seeks to ensure that Employability Skills are well-defined and written into units of competency so that they are apparent, clear and can be delivered and assessed as an essential component of unit work outcomes.

The following table contains examples of embedded Employability Skills for each component of a unit of competency. Please note that in the examples below the bracketed skills are provided only for clarification and will not be present in units of competency within this Training Package.

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Performance Criteria	Work individually or as a team member to complete maintenance tasks in a timely manner and in accordance with enterprise procedures and requirements. (Communication, Teamwork, Initiative and Enterprise and Self Management)
Range Statement	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level. (Communication and Problem Solving)
Required Skills and Knowledge	Applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate electrical system malfunctions of the above components and systems (Problem Solving, Communication and Technology)
Evidence Guide	A person who demonstrates competency in this unit must be able to demonstrate initiative, effectively manage their own workload and contribute to the ongoing development of their skills, knowledge and competencies in the applicable field of aviation maintenance. (Initiative and Enterprise, Self Management and Learning)

Competency Standards - Industry Contextualisation

Competency Standards - Industry Contextualisation

Structure of the Aerospace Industry Competency Standards

Within this Training Package the Units of Competency are divided into two types:

- Common units – these indicate competencies that apply across the majority of Aeroskills Training Package qualifications at one or more levels of qualification. These units may or may not be mandatory, depending on the individual packaging rules.
- Technical stream units – these are either mandatory or elective units that relate to individual technical streams and related qualifications. Units may be mandatory in one qualification and elective in another because of regulatory and licensing requirements.

The unit numbering system is as follows:

- Common unit numbers begin with '1', e.g. MEA101B
- Avionics technical stream units begin with '2,' e.g. MEA201B
- Mechanical technical stream units begin with '3', e.g. MEA301B
- Structures technical stream units begin with '4', e.g. MEA401B
- Aircraft Life Support and Furnishing units begin with '5', e.g. MEA501A
- Armament units begin with '6', e.g. MEA601A

The Units of Competency are arranged in sections in Volume 2 according to the basic groups of Common, Avionics, Mechanical, Structures, Aircraft Life Support and Furnishing, Armament and imported units.

Appendices

Appendices

Appendix 1: Cross Reference to CASA Licensing Syllabus

For the purpose of establishing parity with the licensing system of the European Aviation Safety Authority (EASA) the Civil Aviation Safety Authority (CASA) includes in CAO 100.66 and in the proposed Civil Aviation Safety Regulation Part 66 a licensing examination syllabus. Where individuals are seeking the grant of an Aircraft Maintenance Engineer Licence (or interim maintenance authority under the transitional arrangements of CAO 100.66) in Categories A, B1 or B2 it must be demonstrated that the knowledge requirements of the syllabus were fully covered in the underpinning knowledge applicable to the units of competency relevant to the licence sought.

In this Appendix there is a table for each A and B1 Licence, and for the B2 Licence (or the equivalent maintenance authorities) in which syllabus modules and topics applicable to each licence are listed, along with the units of competency that are expected to provide the required knowledge. RTOs operating as Maintenance Training Organisations under Civil Aviation Safety Regulation Part 147 (or CAO 100.66 during the transitional period) are required to ensure that the modules and topics are fully covered in the off-job training applicable to each listed unit of competency.

Refer also to Licensing/Registration Requirements in Section 3 Assessment Guidelines.

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – A1 Licence

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA345A
Module 2 Physics	MEA345A
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA265A
3.2 Static Electricity and Conduction	MEA265A
3.3 Electrical Terminology	MEA265A
3.4 Generation of Electricity	MEA265A
3.5 DC Sources of Electricity	MEA265A
3.6 DC Circuits	Not required
3.7 Resistance/Resistor	Not required
3.8 Power	Not required
3.9 Capacitance/Capacitor	Not required
3.10 Magnetism	Not required
3.11 Inductance/Inductor	Not required
3.12 DC Motor/Generator Theory	Not required
3.13 AC Theory	MEA264A
3.14 Resistive, Capacitive and	Not required

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
Inductive Circuits	
3.15 Transformers	Not required
3.16 Filters	Not required
3.17 AC Generators	Not required
3.18 AC Motors	Not required
Module 4 Electronic Fundamentals	
4.1 Semiconductors	Not required
4.2 Printed Circuit Boards	Not required
4.3 Sevo mechanisms	Not required
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA345A
5.2 Numbering Systems	Not required
5.3 Data Conversion	Not required
5.4 Data Buses	Not required
5.5 Logic Circuits	Not required
5.6 Basic Computer Structure	MEA345A
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	Not required
5.11 Electronic Displays	Not required
5.12 Electrostatic Sensitive Devices	MEA264A

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
5.13 Software Management Control	Not required
5.14 Electromagnetic Environment	Not required
5.15 Typical Electronic/Digital Aircraft Systems	Not required
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA418A
6.4 Corrosion	MEA345A
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA344A
6.9 Transmissions	MEA344A, 345A
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA265A
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 240B

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
7.4 Avionic General Test Equipment	Not required
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA265A
7.8 Riveting	MEA418A
7.9 Pipes and Hoses	MEA344A, 345A
7.10 Springs	MEA344A
7.11 Bearings	MEA344A
7.12 Transmissions	MEA344A, 345A
7.13 Control Cables	MEA345A
7.14 Material Handling	Not required
7.15 Welding, Brazing, Soldering and Bonding	Not required
7.16 Aircraft Weight and Balance	Not required
7.17 Aircraft Handling and Storage	MEA345A
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA345A
7.19 Abnormal Events	MEA119A
7.20 Maintenance Procedures	MEA119A, 345A
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA345A
8.2 Aerodynamics	MEA345A

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
8.3 Theory of Flight	MEA345A
8.4 Flight Stability and Dynamics	MEA345A
Module 9 Human Factors	MEA103B
Module 10 Aviation Legislation	MEA119A
Module 11 Aeroplane Aerodynamics, Structure and Systems	
11.1 Theory of Flight	MEA345A
11.2 Airframe Structures – General concepts	MEA345A
11.3 Airframe Structures – Aeroplanes	MEA345A
11.4 Air Conditioning and Cabin Pressurisation	MEA345A
11.5 Instruments/Avionic Systems	MEA264A
11.6 Electrical Power	MEA264A
11.7 Equipment and Furnishings	MEA264A, 344A, 345A
11.8 Fire Protection	MEA345A
11.9 Flight Controls	MEA345A
11.10 Fuel Systems	MEA345A
11.11 Hydraulic Power	MEA345A
11.12 Ice and Rain Protection	MEA345A
11.13 Landing Gear	MEA344A, 345A
11.14 Lights	MEA264A
11.15 Oxygen	MEA345A

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
11.16 Pneumatic/Vacuum	MEA345A
11.17 Water/Waste	MEA344A, 345A
11.18 On-Board Maintenance Systems	MEA345A
11.19 Integrated modular avionics	MEA264A
11.20 Cabin intercommunication data systems	MEA264A
11.21 Cabin network services	MEA264A
11.22 Information systems such as air traffic and information management systems and network server systems	MEA264A
Module 15 Gas Turbine Engine	
15.1 Fundamentals	MEA345A
15.2 Engine Performance	Not required
15.3 Inlet	MEA345A
15.4 Compressors	MEA345A
15.5 Combustion Section	MEA345A
15.6 Turbine Section	MEA345A
15.7 Exhaust	MEA345A
15.8 Bearings and Seals	Not required
15.9 Lubricants and Fuels	MEA345A
15.10 Lubrication Systems	MEA345A
15.11 Fuel Systems	MEA345A
15.12 Air Systems	MEA345A

Syllabus Reference A1 Licence	Units of Competency Providing Full Coverage
15.13 Starting and Ignition Systems	MEA345A
15.14 Engine Indication Systems	MEA345A
15.15 Power Augmentation Systems	Not required
15.16 Turbo Prop Engines	MEA345A
15.17 Turbo-Shaft Engines	MEA345A
15.18 Auxiliary Power Units	MEA345A
15.19 Power plant Installation	MEA345A
15.20 Fire Protection Systems	MEA345A
15.21 Engine Monitoring and Ground Operation	MEA345A
15.22 Engine Storage and Preservation	Not required
Module 17 Propeller	
17.1 Fundamentals	MEA345A
17.2 Propeller Construction	MEA345A
17.3 Propeller Pitch Control	MEA345A
17.4 Propeller Synchronising	Not required
17.5 Propeller Ice Protection	MEA345A
17.6 Propeller Maintenance	MEA345A
17.7 Propeller Storage and Preservation	MEA345A

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – A2 Licence

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA347A
Module 2 Physics	MEA347A
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA265A
3.2 Static Electricity and Conduction	MEA265A
3.3 Electrical Terminology	MEA265A
3.4 Generation of Electricity	MEA265A
3.5 DC Sources of Electricity	MEA265A
3.6 DC Circuits	Not required
3.7 Resistance/Resistor	Not required
3.8 Power	Not required
3.9 Capacitance/Capacitor	Not required
3.10 Magnetism	Not required
3.11 Inductance/Inductor	Not required
3.12 DC Motor/Generator Theory	Not required
3.13 AC Theory	MEA264A
3.14 Resistive, Capacitive and Inductive Circuits	Not required
3.15 Transformers	Not required
3.16 Filters	Not required
3.17 AC Generators	Not required
3.18 AC Motors	Not required
Module 4 Electronic	

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
Fundamentals	
4.1 Semiconductors	Not required
4.2 Printed Circuit Boards	Not required
4.3 Sevomechanisms	Not required
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA347A
5.2 Numbering Systems	Not required
5.3 Data Conversion	Not required
5.4 Data Buses	Not required
5.5 Logic Circuits	Not required
5.6 Basic Computer Structure	MEA347A
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	Not required
5.11 Electronic Displays	Not required
5.12 Electrostatic Sensitive Devices	MEA264A
5.13 Software Management Control	Not required
5.14 Electromagnetic Environment	Not required
5.15 Typical Electronic/Digital Aircraft Systems	Not required
Module 6 Materials and Handling	

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA418A
6.4 Corrosion	MEA347A
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA347A
6.9 Transmissions	MEA344A, 347A
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA265A
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 240B
7.4 Avionic General Test Equipment	Not required
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA265A
7.8 Riveting	MEA418A

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
7.9 Pipes and Hoses	MEA344A, 347A
7.10 Springs	MEA344A
7.11 Bearings	MEA344A
7.12 Transmissions	MEA344A, 347A
7.13 Control Cables	MEA347A
7.14 Material Handling	Not required
7.15 Welding, Brazing, Soldering and Bonding	Not required
7.16 Aircraft Weight and Balance	Not required
7.17 Aircraft Handling and Storage	MEA347A
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA347A
7.19 Abnormal Events	MEA119A
7.20 Maintenance Procedures	MEA119A, 347A
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA347A
8.2 Aerodynamics	MEA347A
8.3 Theory of Flight	MEA347A
8.4 Flight Stability and Dynamics	MEA347A
Module 9 Human Factors	MEA103B
Module 10 Aviation Legislation	MEA119A
Module 11 Aeroplane Aerodynamics, Structure and	

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
Systems	
11.1 Theory of Flight	MEA347A
11.2 Airframe Structures – General concepts	MEA347A
11.3 Airframe Structures – Aeroplanes	MEA347A
11.4 Air Conditioning and Cabin Pressurisation	MEA347A
11.5 Instruments/Avionic Systems	MEA264A
11.6 Electrical Power	MEA264A
11.7 Equipment and Furnishings	MEA264A, 344A, 347A
11.8 Fire Protection	MEA347A
11.9 Flight Controls	MEA347A
11.10 Fuel Systems	MEA347A
11.11 Hydraulic Power	MEA347A
11.12 Ice and Rain Protection	MEA347A
11.13 Landing Gear	MEA344A, 347A
11.14 Lights	MEA264A, 347A
11.15 Oxygen	MEA347A
11.16 Pneumatic/Vacuum	MEA347A
11.17 Water/Waste	MEA344A, 347A
11.18 On Board Maintenance Systems	MEA347A
11.19 Integrated modular avionics	MEA264A
11.20 Cabin intercommunication data	MEA264A

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
systems	
11.21 Cabin network services	MEA264A
11.22 Information systems such as air traffic and information management systems and network server systems	MEA264A
Module 16 Piston Engine	
16.1 Fundamentals	MEA347A
16.2 Engine Performance	MEA347A
16.3 Engine Construction	MEA347A
16.4 Engine Fuel Systems	MEA347A
16.5 Starting and ignition system	MEA347A
16.6 Induction, Exhaust and Cooling Systems	MEA347A
16.7 Supercharging/Turbocharging	MEA347A
16.8 Lubricants and Fuels	MEA347A
16.9 Lubrication Systems	MEA347A
16.10 Engine Indication Systems	MEA347A
16.11 Power plant Installation	MEA347A
16.12 Engine Monitoring and Ground Operation	MEA347A
16.13 Engine Storage and Preservation	Not required
Module 17 Propeller	
17.1 Fundamentals	MEA347A
17.2 Propeller Construction	MEA347A

Syllabus Reference A2 Licence	Units of Competency Providing Full Coverage
17.3 Propeller Pitch Control	MEA347A
17.4 Propeller Synchronising	Not required
17.5 Propeller Ice Protection	MEA347A
17.6 Propeller Maintenance	MEA347A
17.7 Propeller Storage and Preservation	MEA347A

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – A3 Licence

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA346A
Module 2 Physics	MEA346A
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA265A
3.2 Static Electricity and Conduction	MEA265A
3.3 Electrical Terminology	MEA265A
3.4 Generation of Electricity	MEA265A
3.5 DC Sources of Electricity	MEA265A
3.6 DC Circuits	Not required
3.7 Resistance/Resistor	Not required
3.8 Power	Not required
3.9 Capacitance/Capacitor	Not required
3.10 Magnetism	Not required
3.11 Inductance/Inductor	Not required
3.12 DC Motor/Generator	Not required

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
Theory	
3.13 AC Theory	MEA264A
3.14 Resistive, Capacitive and Inductive Circuits	Not required
3.15 Transformers	Not required
3.16 Filters	Not required
3.17 AC Generators	Not required
3.18 AC Motors	Not required
Module 4 Electronic Fundamentals	
4.1 Semiconductors	Not required
4.2 Printed Circuit Boards	Not required
4.3 Servomechanisms	Not required
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA346A
5.2 Numbering Systems	Not required
5.3 Data Conversion	Not required
5.4 Data Buses	Not required
5.5 Logic Circuits	Not required
5.6 Basic Computer Structure	MEA346A
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	Not required

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
5.11 Electronic Displays	Not required
5.12 Electrostatic Sensitive Devices	MEA264A
5.13 Software Management Control	Not required
5.14 Electromagnetic Environment	Not required
Typical Electronic/Digital Aircraft Systems	Not required
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA418A
6.4 Corrosion	MEA346A
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA344A
6.9 Transmissions	MEA344A, 346A
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA265A
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 240B
7.4 Avionic General Test Equipment	Not required
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA265A
7.8 Riveting	MEA418A
7.9 Pipes and Hoses	MEA344A, 346A
7.10 Springs	MEA344A
7.11 Bearings	MEA344A
7.12 Transmissions	MEA344A, 346A
7.13 Control Cables	MEA346A
7.14 Material Handling	Not required
7.15 Welding, Brazing, Soldering and Bonding	Not required
7.16 Aircraft Weight and Balance	Not required
7.17 Aircraft Handling and Storage	MEA346A
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA346A
7.19 Abnormal Events	MEA119A
7.20 Maintenance Procedures	MEA119A, 346A
Module 8 Basic Aerodynamics	

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
8.1 Physics of the Atmosphere	MEA346A
8.2 Aerodynamics	MEA346A
8.3 Theory of Flight	MEA346A
8.4 Flight Stability and Dynamics	MEA346A
Module 9 Human Factors	MEA103B
Module 10 Aviation Legislation	MEA119A
Module 12 Helicopter Aerodynamics, Structure and Systems	
12.1 Theory of Flight – Rotary Wing Aerodynamics	MEA346A
12.2 Flight control Systems	MEA346A
12.3 Blade Tracking and Vibration Analysis	MEA346A
12.4 Transmission	MEA346A
12.5 Airframe Structures	MEA346A
12.6 Air Conditioning	MEA346A
12.7 Instruments/Avionic Systems	MEA264A
12.8 Electrical Power	MEA264A
12.9 Equipment and Furnishings	MEA264A, 344A, 346A
12.10 Fire Protection	MEA346A
12.11 Fuel Systems	MEA346A
12.12 Hydraulic Power	MEA346A
12.13 Ice and Rain Protection	MEA346A

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
12.14 Landing Gear	MEA344A, 346A
12.15 Lights	MEA264A
12.16 Pneumatic/Vacuum	MEA346A
12.17 Integrated modular avionics	MEA264A
12.18 On Board Maintenance Systems	MEA346A
12.19 Information systems such as air traffic and information management systems and network server systems	MEA264A
Module 15 Gas Turbine Engine	
15.1 Fundamentals	MEA346A
15.2 Engine Performance	Not required
15.3 Inlet	MEA346A
15.4 Compressors	MEA346A
15.5 Combustion Section	MEA346A
15.6 Turbine Section	MEA346A
15.7 Exhaust	MEA346A
15.8 Bearings and Seals	Not required
15.9 Lubricants and Fuels	MEA346A
15.10 Lubrication Systems	MEA346A
15.11 Fuel Systems	MEA346A
15.12 Air Systems	MEA346A
15.13 Starting and Ignition Systems	MEA346A
15.14 Engine Indication	MEA346A

Syllabus Reference A3 Licence	Units of Competency Providing Full Coverage
Systems	
15.15 Power Augmentation Systems	Not required
15.16 Turbo Prop Engines	MEA346A
15.17 Turbo-Shaft Engines	MEA346A
15.18 Auxiliary Power Units	MEA346A
15.19 Power plant Installation	MEA346A
15.20 Fire Protection Systems	MEA346A
15.21 Engine Monitoring and Ground Operation	MEA346A
15.22 Engine Storage and Preservation	Not required

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – A4 Licence

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA348A
Module 2 Physics	MEA348A
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA265A
3.2 Static Electricity and Conduction	MEA265A
3.3 Electrical Terminology	MEA265A
3.4 Generation of Electricity	MEA265A
3.5 DC Sources of Electricity	MEA265A
3.6 DC Circuits	Not required
3.7 Resistance/Resistor	Not required

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
3.8 Power	Not required
3.9 Capacitance/Capacitor	Not required
3.10 Magnetism	Not required
3.11 Inductance/Inductor	Not required
3.12 DC Motor/Generator Theory	Not required
3.13 AC Theory	MEA264A
3.14 Resistive, Capacitive and Inductive Circuits	Not required
3.15 Transformers	Not required
3.16 Filters	Not required
3.17 AC Generators	Not required
3.18 AC Motors	Not required
Module 4 Electronic Fundamentals	
4.1 Semiconductors	Not required
4.2 Printed Circuit Boards	Not required
4.3 Servomechanisms	Not required
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA348A
5.2 Numbering Systems	Not required
5.3 Data Conversion	Not required
5.4 Data Buses	Not required
5.5 Logic Circuits	Not required

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
5.6 Basic Computer Structure	MEA348A
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	Not required
5.11 Electronic Displays	Not required
5.12 Electrostatic Sensitive Devices	MEA264A
5.13 Software Management Control	Not required
5.14 Electromagnetic Environment	Not required
Typical Electronic/Digital Aircraft Systems	Not required
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA418A
6.4 Corrosion	MEA348A
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA344A
6.9 Transmissions	MEA344A, 348A

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA265A
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 240B
7.4 Avionic General Test Equipment	Not required
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA265A
7.8 Riveting	MEA418A
7.9 Pipes and Hoses	MEA344A, 348A
7.10 Springs	MEA344A
7.11 Bearings	MEA344A
7.12 Transmissions	MEA344A, 348A
7.13 Control Cables	MEA348A
7.14 Material Handling	Not required
7.15 Welding, Brazing, Soldering and Bonding	Not required
7.16 Aircraft Weight and Balance	Not required
7.17 Aircraft Handling and	MEA348A

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
Storage	
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA348A
7.19 Abnormal Events	MEA119A
7.20 Maintenance Procedures	MEA119A, 348A
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA348A
8.2 Aerodynamics	MEA348A
8.3 Theory of Flight	MEA348A
8.4 Flight Stability and Dynamics	MEA348A
Module 9 Human Factors	MEA103B
Module 10 Aviation Legislation	MEA119A
Module 12 Helicopter Aerodynamics, Structure and Systems	
12.1 Theory of Flight – Rotary Wing Aerodynamics	MEA348A
12.2 Flight control Systems	MEA348A
12.3 Blade Tracking and Vibration Analysis	MEA348A
12.4 Transmission	MEA348A
12.5 Airframe Structures	MEA348A
12.6 Air Conditioning	MEA348A
12.7 Instruments/Avionic Systems	MEA348A
12.8 Electrical Power	MEA264A

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
12.9 Equipment and Furnishings	MEA264A, 344A, 348A
12.10 Fire Protection	MEA348A
12.11 Fuel Systems	MEA348A
12.12 Hydraulic Power	MEA348A
12.13 Ice and Rain Protection	MEA348A
12.14 Landing Gear	MEA344A, 348A
12.15 Lights	MEA264A, 348A
12.16 Pneumatic/Vacuum	MEA348A
12.17 Integrated modular avionics	MEA264A
12.18 On Board Maintenance Systems	MEA348A
12.19 Information systems such as air traffic and information management systems and network server systems	MEA264A
Module 16 Piston Engine	
16.1 Fundamentals	MEA348A
16.2 Engine Performance	MEA348A
16.3 Engine Construction	MEA348A
16.4 Engine Fuel System	MEA348A
16.5 Starting and Ignition Systems	MEA348A
16.6 Induction, Exhaust and Cooling Systems	MEA348A
16.7 Supercharging/Turbocharging	MEA348A
16.8 Lubricants and Fuels	MEA348A

Syllabus Reference A4 Licence	Units of Competency Providing Full Coverage
16.9 Lubrication Systems	MEA348A
16.10 Engine Indication Systems	MEA348A
16.11 Power plant Installation	MEA348A
16.12 Engine Monitoring and Ground Operation	MEA348A
16.13 Engine Storage and Preservation	Not required

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – B1.1 Licence

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA201B
Module 2 Physics	MEA201B
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA201B
3.2 Static Electricity and Conduction	MEA201B
3.3 Electrical Terminology	MEA201B
3.4 Generation of Electricity	MEA201B
3.5 DC Sources of Electricity	MEA201B
3.6 DC Circuits	MEA201B
3.7 Resistance/Resistor	MEA201B
3.8 Power	MEA201B
3.9 Capacitance/Capacitor	MEA201B
3.10 Magnetism	MEA201B

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
3.11 Inductance/Inductor	MEA201B
3.12 DC Motor/Generator Theory	MEA203C
3.13 AC Theory	MEA203C
3.14 Resistive, Capacitive and Inductive Circuits	MEA203C
3.15 Transformers	MEA203C
3.16 Filters	MEA203C
3.17 AC Generators	MEA203C
3.18 AC Motors	MEA203C
Module 4 Electronic Fundamentals	
4.1 Semiconductors	MEA343B
4.2 Printed Circuit Boards	MEA343B
4.3 Servomechanisms	MEA343B
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA343B
5.2 Numbering Systems	MEA343B
5.3 Data Conversion	MEA343B
5.4 Data Buses	MEA343B
5.5 Logic Circuits	MEA343B
5.6 Basic Computer Structure	MEA343B
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
5.9 Multiplexing	Not required
5.10 Fibre Optics	MEA343B
5.11 Electronic Displays	MEA343B
5.12 Electrostatic Sensitive Devices	MEA343B
5.13 Software Management Control	MEA343B
5.14 Electromagnetic Environment	MEA343B
5.15 Typical Electronic/Digital Aircraft Systems	MEA343B
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA339B
6.4 Corrosion	MEA339B
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA302C
6.9 Transmissions	MEA306C
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA201B, 246C

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107C, 109B
7.3 Tools	MEA109B, 260B
7.4 Avionic General Test Equipment	MEA260B
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA246C
7.8 Riveting	MEA339B
7.9 Pipes and Hoses	MEA302C, 303C, 328C
7.10 Springs	MEA318B, 328C
7.11 Bearings	MEA318B, 319B
7.12 Transmissions	MEA318B, 319B
7.13 Control Cables	MEA318B, 328C
7.14 Material Handling	MEA339B
7.15 Welding, Brazing, Soldering and Bonding	MEA201B, 339B, 365A
7.16 Aircraft Weight and Balance	MEA325B
7.17 Aircraft Handling and Storage	MEA301C
7.18 Disassembly, Inspection, Repair and Assembly	MEA227C, 320B, 321B, 322B, 328C, 339B, 365A

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
Techniques	
7.19 Abnormal Events	MEA112B
7.20 Maintenance Procedures	MEA112B
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA321B, 322B
8.2 Aerodynamics	MEA321B
8.3 Theory of Flight	MEA321B
8.4 Flight Stability and Dynamics	MEA321B
Module 9 Human Factors	MEA103B, 113C
Module 10 Aviation Legislation	MEA111B
Module 11 Aeroplane Aerodynamics, Structure and Systems	
11.1 Theory of Flight	MEA321B
11.2 Airframe Structures – General concepts	MEA339B
11.3 Airframe Structures – Aeroplanes	MEA339B
11.4 Air Conditioning and Cabin Pressurisation	MEA219C, 223C, 318B
11.5 Instruments/Avionic Systems	MEA343B
11.6 Electrical Power	MEA203C, 301C
11.7 Equipment and Furnishings	MEA317C
11.8 Fire Protection	MEA223C, 318B
11.9 Flight Controls	MEA223C, 318B, 320B

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
11.10 Fuel Systems	MEA223C, 301C, 318B
11.11 Hydraulic Power	MEA223C, 301C, 318B
11.12 Ice and Rain Protection	MEA223C, 301C, 318B
11.13 Landing Gear	MEA223C, 318B
11.14 Lights	MEA223C
11.15 Oxygen	MEA222C
11.16 Pneumatic/Vacuum	MEA223C, 318B
11.17 Water/Waste	MEA223C, 318B
11.18 On-Board Maintenance Systems	MEA343B
11.19 Integrated modular avionics	MEA343B
11.20 Cabin intercommunication data systems	MEA343B
11.21 Cabin network services	MEA343B
11.22 Information systems such as air traffic and information management systems and network server systems	MEA343B
Module 15 Gas Turbine Engine	
15.1 Fundamentals	MEA322B
15.2 Engine Performance	MEA322B
15.3 Inlet	MEA223C, 322B
15.4 Compressors	MEA322B
15.5 Combustion Section	MEA322B

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
15.6 Turbine Section	MEA322B
15.7 Exhaust	MEA322B
15.8 Bearings and Seals	MEA322B
15.9 Lubricants and Fuels	MEA301C
15.10 Lubrication Systems	MEA322B
15.11 Fuel Systems	MEA223C, 322B
15.12 Air Systems	MEA223C, 322B
15.13 Starting and Ignition Systems	MEA223C, 322B
15.14 Engine Indication Systems	MEA223C, 322B, 343B
15.15 Power Augmentation Systems	MEA322B
15.16 Turbo Prop Engines	MEA223C, 322B
15.17 Turbo-Shaft Engines	MEA223C, 322B
15.18 Auxiliary Power Units	MEA223C, 322B
15.19 Power plant Installation	MEA203C, 306C
15.20 Fire Protection Systems	MEA223C, 318B
15.21 Engine Monitoring and Ground Operation	MEA322B, 323B
15.22 Engine Storage and Preservation	MEA306C
Module 17 Propeller	
17.1 Fundamentals	MEA315C
17.2 Propeller Construction	MEA315C
17.3 Propeller Pitch Control	MEA223C, 315C

Syllabus Reference B1.1 Licence	Units of Competency Providing Full Coverage
17.4 Propeller Synchronising	MEA223C, 315C
17.5 Propeller Ice Protection	MEA223C, 315C
17.6 Propeller Maintenance	MEA315C
17.7 Propeller Storage and Preservation	MEA307C

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – B1.2 Licence

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA201B
Module 2 Physics	MEA201B
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA201B
3.2 Static Electricity and Conduction	MEA201B
3.3 Electrical Terminology	MEA201B
3.4 Generation of Electricity	MEA201B
3.5 DC Sources of Electricity	MEA201B
3.6 DC Circuits	MEA201B
3.7 Resistance/Resistor	MEA201B
3.8 Power	MEA201B
3.9 Capacitance/Capacitor	MEA201B
3.10 Magnetism	MEA201B
3.11 Inductance/Inductor	MEA201B
3.12 DC Motor/Generator	MEA203C

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
Theory	
3.13 AC Theory	MEA203C
3.14 Resistive, Capacitive and Inductive Circuits	MEA203C
3.15 Transformers	MEA203C
3.16 Filters	MEA203C
3.17 AC Generators	MEA203C
3.18 AC Motors	MEA203C
Module 4 Electronic Fundamentals	
4.1 Semiconductors	MEA343B
4.2 Printed Circuit Boards	MEA343B
4.3 Servomechanisms	MEA343B
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA343B
5.2 Numbering Systems	MEA343B
5.3 Data Conversion	MEA343B
5.4 Data Buses	MEA343B
5.5 Logic Circuits	MEA343B
5.6 Basic Computer Structure	MEA343B
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	MEA343B

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
5.11 Electronic Displays	MEA343B
5.12 Electrostatic Sensitive Devices	MEA343B
5.13 Software Management Control	MEA343B
5.14 Electromagnetic Environment	MEA343B
5.15 Typical Electronic/Digital Aircraft Systems	MEA343B
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA339B
6.4 Corrosion	MEA339B
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA302C
6.9 Transmissions	MEA306C
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA201B, 246C
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft	MEA101B

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
and Workshop	
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 260B
7.4 Avionic General Test Equipment	MEA260B
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA246C
7.8 Riveting	MEA339B
7.9 Pipes and Hoses	MEA302C, 303C, 328C
7.10 Springs	MEA309C, 328C
7.11 Bearings	MEA309C, 313C
7.12 Transmissions	MEA309C, 313C
7.13 Control Cables	MEA309C, 328C
7.14 Material Handling	MEA339B
7.15 Welding, Brazing, Soldering and Bonding	MEA201B, 339B, 365A
7.16 Aircraft Weight and Balance	MEA325B
7.17 Aircraft Handling and Storage	MEA301C
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA211C, 309C, 313C, 323B, 328C, 339B, 365A
7.19 Abnormal Events	MEA112B
7.20 Maintenance Procedures	MEA112B

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA312B
8.2 Aerodynamics	MEA312B
8.3 Theory of Flight	MEA312B
8.4 Flight Stability and Dynamics	MEA312B
Module 9 Human Factors	MEA103B, 113C
Module 10 Aviation Legislation	MEA111B
Module 11 Aeroplane Aerodynamics, Structure and Systems	
11.1 Theory of Flight	MEA312B
11.2 Airframe Structures – General concepts	MEA339B
11.3 Airframe Structures – Aeroplanes	MEA339B
11.4 Air Conditioning and Cabin Pressurisation	MEA211C, 219C, 309C
11.5 Instruments/Avionic Systems	MEA343B
11.6 Electrical Power	MEA211C, 301C
11.7 Equipment and Furnishings	MEA304C or 317B
11.8 Fire Protection	MEA211C, 309C
11.9 Flight Controls	MEA211C 312B
11.10 Fuel Systems	MEA211C, 301C, 309C
11.11 Hydraulic Power	MEA211C, 301C, 309C

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
11.12 Ice and Rain Protection	MEA211C, 301C, 309C
11.13 Landing Gear	MEA211C, 309C
11.14 Lights	MEA211C
11.15 Oxygen	MEA222C
11.16 Pneumatic/Vacuum	MEA211C, 310C
11.17 Water/Waste	MEA211C, 309C
11.18 On Board Maintenance Systems	MEA343B
11.19 Integrated modular avionics	MEA343B
11.20 Cabin intercommunication data systems	MEA343B
11.21 Cabin network services	MEA343B
11.22 Information systems such as air traffic and information management systems and network server systems	MEA343B
Module 16 Piston Engine	
16.1 Fundamentals	MEA313C
16.2 Engine Performance	MEA313C
16.3 Engine Construction	MEA313C
16.4 Engine Fuel Systems	MEA211C, 313C, 343B
16.5 Starting and Ignition Systems	MEA211C, 313C
16.6 Induction, Exhaust and Cooling Systems	MEA313C
16.7	MEA313C

Syllabus Reference B1.2 Licence	Units of Competency Providing Full Coverage
Supercharging/Turbocharging	
16.8 Lubricants and Fuels	MEA301C, 313C
16.9 Lubrication Systems	MEA313C
16.10 Engine Indication Systems	MEA211C, 313C, 343B
16.11 Powerplant Installation	MEA203C, 306C
16.12 Engine Monitoring and Ground Operation	MEA313C
16.13 Engine Storage and Preservation	MEA306C
Module 17 Propeller	
17.1 Fundamentals	MEA315B
17.2 Propeller Construction	MEA315B
17.3 Propeller Pitch Control	MEA223C, 315B
17.4 Propeller Synchronising	MEA223C, 315B
17.5 Propeller Ice Protection	MEA223C, 315B
17.6 Propeller Maintenance	MEA315B
17.7 Propeller Storage and Preservation	MEA307B

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – B1.3 Licence

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA201B
Module 2 Physics	MEA201B
Module 3 Electrical Fundamentals	

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
3.1 Electron Theory	MEA201B
3.2 Static Electricity and Conduction	MEA201B
3.3 Electrical Terminology	MEA201B
3.4 Generation of Electricity	MEA201B
3.5 DC Sources of Electricity	MEA201B
3.6 DC Circuits	MEA201B
3.7 Resistance/Resistor	MEA201B
3.8 Power	MEA201B
3.9 Capacitance/Capacitor	MEA201B
3.10 Magnetism	MEA201B
3.11 Inductance/Inductor	MEA201B
3.12 DC Motor/Generator Theory	MEA203C
3.13 AC Theory	MEA203C
3.14 Resistive, Capacitive and Inductive Circuits	MEA203C
3.15 Transformers	MEA203C
3.16 Filters	MEA203C
3.17 AC Generators	MEA203C
3.18 AC Motors	MEA203C
Module 4 Electronic Fundamentals	
4.1 Semiconductors	MEA343B
4.2 Printed Circuit Boards	MEA343B

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
4.3 Servomechanisms	MEA343B
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA343B
5.2 Numbering Systems	MEA343B
5.3 Data Conversion	MEA343B
5.4 Data Buses	MEA343B
5.5 Logic Circuits	MEA343B
5.6 Basic Computer Structure	MEA343B
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	MEA343B
5.11 Electronic Displays	MEA343B
5.12 Electrostatic Sensitive Devices	MEA343B
5.13 Software Management Control	MEA343B
5.14 Electromagnetic Environment	MEA343B
Typical Electronic/Digital Aircraft Systems	MEA343B
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials –	MEA109B

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
Non-Ferrous	
6.3 Aircraft Materials – Composite and Non-Metallic	MEA339B
6.4 Corrosion	MEA339B
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA302C
6.9 Transmissions	MEA306C
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA201B, 246C
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 260B
7.4 Avionic General Test Equipment	MEA260B
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA246C
7.8 Riveting	MEA339B
7.9 Pipes and Hoses	MEA302C, 303C, 328C

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
7.10 Springs	MEA309C, 328C
7.11 Bearings	MEA309C, 319B
7.12 Transmissions	MEA309C, 316C
7.13 Control Cables	MEA316C, 328C
7.14 Material Handling	MEA339B
7.15 Welding, Brazing, Soldering and Bonding	MEA201B, 339B, 365A
7.16 Aircraft Weight and Balance	MEA325B
7.17 Aircraft Handling and Storage	MEA301C
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA309C, 322B, 323B, 328C, 339B, 365A
7.19 Abnormal Events	MEA112B
7.20 Maintenance Procedures	MEA112B
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA316C, 322B
8.2 Aerodynamics	MEA316C
8.3 Theory of Flight	MEA316C
8.4 Flight Stability and Dynamics	MEA316C
Module 9 Human Factors	MEA103B, 113C
Module 10 Aviation Legislation	MEA111B
Module 12 Helicopter Aerodynamics, Structures and Systems	

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
12.1 Theory of Flight – Rotary Wing Aerodynamics	MEA316C
12.2 Flight Control Systems	MEA316C
12.3 Blade Tracking and Vibration Analysis	MEA316C
12.4 Transmissions	MEA316C
12.5 Airframe Structures	MEA304C, 339B
12.6 Air Conditioning	MEA301C
12.7 Instruments/Avionic Systems	MEA343B
12.8 Electrical Power	MEA223C, 301C
12.9 Equipment and Furnishings	MEA304C
12.10 Fire Protection	MEA223C, 318B
12.11 Fuel Systems	MEA223C, 301C, 309C
12.12 Hydraulic Power	MEA223C, 309C
12.13 Ice and Rain Protection	MEA223C, 310C
12.14 Landing Gear	MEA223C, 309C
12.15 Lights	MEA223C
12.16 Pneumatic/Vacuum	MEA223C, 310C
12.17 Integrated modular avionics	MEA343B
12.18 On Board Maintenance Systems	MEA343B
12.19 Information systems such as air traffic and information management systems and network server systems	MEA343B

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
Module 15 Gas Turbine Engine	
15.1 Fundamentals	MEA322B
15.2 Engine Performance	MEA322B
15.3 Inlet	MEA223C, 322B
15.4 Compressors	MEA322B
15.5 Combustion Section	MEA322B
15.6 Turbine Section	MEA322B
15.7 Exhaust	MEA322B
15.8 Bearings and Seals	MEA322B
15.9 Lubricants and Fuels	MEA301C
15.10 Lubrication Systems	MEA322B
15.11 Fuel Systems	MEA223C, 322B
15.12 Air Systems	MEA223C, 322B
15.13 Starting and Ignition Systems	MEA223C, 322B
15.14 Engine Indication Systems	MEA322B, 343B
15.15 Power Augmentation Systems	MEA322B
15.16 Turbo Prop Engines	MEA223C, 322B
15.17 Turbo-Shaft Engines	MEA223C, 322B
15.18 Auxiliary Power Units	MEA223C, 322B
15.19 Powerplant Installation	MEA203C, 306C
15.20 Fire Protection Systems	MEA223C, 310C

Syllabus Reference B1.3 Licence	Units of Competency Providing Full Coverage
15.21 Engine Monitoring and Ground Operation	MEA322B, 323B
15.22 Engine Storage and Preservation	MEA306C

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – B1.4 Licence

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA201B
Module 2 Physics	MEA201B
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA201B
3.2 Static Electricity and Conduction	MEA201B
3.3 Electrical Terminology	MEA201B
3.4 Generation of Electricity	MEA201B
3.5 DC Sources of Electricity	MEA201B
3.6 DC Circuits	MEA201B
3.7 Resistance/Resistor	MEA201B
3.8 Power	MEA201B
3.9 Capacitance/Capacitor	MEA201B
3.10 Magnetism	MEA201B
3.11 Inductance/Inductor	MEA201B
3.12 DC Motor/Generator Theory	MEA203C

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
3.13 AC Theory	MEA203C
3.14 Resistive, Capacitive and Inductive Circuits	MEA203C
3.15 Transformers	MEA203C
3.16 Filters	MEA203C
3.17 AC Generators	MEA203C
3.18 AC Motors	MEA203C
Module 4 Electronic Fundamentals	
4.1 Semiconductors	MEA343B
4.2 Printed Circuit Boards	MEA343B
4.3 Servomechanisms	MEA343B
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA343B
5.2 Numbering Systems	MEA343B
5.3 Data Conversion	MEA343B
5.4 Data Buses	MEA343B
5.5 Logic Circuits	MEA343B
5.6 Basic Computer Structure	MEA343B
5.7 Microprocessors	Not required
5.8 Integrated Circuits	Not required
5.9 Multiplexing	Not required
5.10 Fibre Optics	MEA343B

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
5.11 Electronic Displays	MEA343B
5.12 Electrostatic Sensitive Devices	MEA343B
5.13 Software Management Control	MEA343B
5.14 Electromagnetic Environment	MEA343B
5.15 Typical Electronic/Digital Aircraft Systems	MEA343B
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA339B
6.4 Corrosion	MEA339B
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA302C
6.9 Transmissions	MEA306C
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA201B, 246C
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft	MEA101B

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
and Workshop	
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 260B
7.4 Avionic General Test Equipment	MEA260B
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA246C
7.8 Riveting	MEA339B
7.9 Pipes and Hoses	MEA302C, 303C, 328C
7.10 Springs	MEA309C, 328C
7.11 Bearings	MEA309C, 313C, 316C
7.12 Transmissions	MEA309C, 316C
7.13 Control Cables	MEA309C, 328C
7.14 Material Handling	MEA339B
7.15 Welding, Brazing, Soldering and Bonding	MEA201B, 339B, 365A
7.16 Aircraft Weight and Balance	MEA325B
7.17 Aircraft Handling and Storage	MEA301C
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA211C, 309C, 313C, 316C, 323B, 328C, 339B, 365A
7.19 Abnormal Events	MEA112B
7.20 Maintenance Procedures	MEA112B

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA316C
8.2 Aerodynamics	MEA316C
8.3 Theory of Flight	MEA316C
8.4 Flight Stability and Dynamics	MEA316C
Module 9 Human Factors	MEA103B, 113C
Module 10 Aviation Legislation	MEA111B
Module 12 Helicopter Aerodynamics, Structures and Systems	
12.1 Theory of Flight – Rotary Wing Aerodynamics	MEA316C
12.2 Flight Control Systems	MEA316C
12.3 Blade Tracking and Vibration Analysis	MEA316C
12.4 Transmissions	MEA316C
12.5 Airframe Structures	MEA304C, 339B
12.6 Air Conditioning	MEA301C
12.7 Instruments/Avionic Systems	MEA343B
12.8 Electrical Power	MEA223C, 301C
12.9 Equipment and Furnishings	MEA304C
12.10 Fire Protection	MEA223C, 310C
12.11 Fuel Systems	MEA223C, 301C, 309C
12.12 Hydraulic Power	MEA223C, 309C

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
12.13 Ice and Rain Protection	MEA223C, 310C
12.14 Landing Gear	MEA223C, 309C
12.15 Lights	MEA223C
12.16 Pneumatic/Vacuum	MEA223C, 310C
12.17 Integrated modular avionics	MEA343B
12.18 On Board Maintenance Systems	MEA343B
12.19 Information systems such as air traffic and information management systems and network server systems	MEA343B
Module 16 Piston Engine	
16.1 Fundamentals	MEA313C
16.2 Engine Performance	MEA313C
16.3 Engine Construction	MEA313C
16.4 Engine Fuel Systems	MEA211C, 313C, 343B
16.5 Starting and Ignition Systems	MEA211C, 313C
16.6 Induction, Exhaust and Cooling Systems	MEA313C
16.7 Supercharging/Turbocharging	MEA313C
16.8 Lubricants and Fuels	MEA301C, 313C
16.9 Lubrication Systems	MEA313C
16.10 Engine Indication Systems	MEA211C, 313C, 340A
16.11 Power plant Installation	MEA203C, 306C

Syllabus Reference B1.4 Licence	Units of Competency Providing Full Coverage
16.12 Engine Monitoring and Ground Operation	MEA313C
16.13 Engine Storage and Preservation	MEA306C

Alignment between CASA Licensing Syllabus and Aeroskills Units of Competency – B2 Licence

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
Module 1 Mathematics	MEA201B
Module 2 Physics	MEA201B
Module 3 Electrical Fundamentals	
3.1 Electron Theory	MEA201B
3.2 Static Electricity and Conduction	MEA201B
3.3 Electrical Terminology	MEA201B
3.4 Generation of Electricity	MEA201B
3.5 DC Sources of Electricity	MEA201B
3.6 DC Circuits	MEA201B
3.7 Resistance/Resistor	MEA201B
3.8 Power	MEA201B
3.9 Capacitance/Capacitor	MEA201B
3.10 Magnetism	MEA201B
3.11 Inductance/Inductor	MEA201B
3.12 DC Motor/Generator Theory	MEA203C
3.13 AC Theory	MEA203C

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
3.14 Resistive, Capacitive and Inductive Circuits	MEA203C
3.15 Transformers	MEA203C
3.16 Filters	MEA203C
3.17 AC Generators	MEA203C
3.18 AC Motors	MEA203C
Module 4 Electronic Fundamentals	
4.1 Semiconductors	MEA228C
4.2 Printed Circuit Boards	MEA207C
4.3 Servomechanisms	MEA228C, 230B
Module 5 Digital Techniques Electronic Instrument Systems	
5.1 Electronic Instrument Systems	MEA228C
5.2 Numbering Systems	MEA228C
5.3 Data Conversion	MEA228C
5.4 Data Buses	MEA228C
5.5 Logic Circuits	MEA228C
5.6 Basic Computer Structure	MEA228C
5.7 Microprocessors	MEA228C
5.8 Integrated Circuits	MEA228C
5.9 Multiplexing	MEA228C
5.10 Fibre Optics	MEA228C
5.11 Electronic Displays	MEA228C
5.12 Electrostatic Sensitive	MEA207C

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
Devices	
5.13 Software Management Control	MEA228C
5.14 Electromagnetic Environment	MEA207C
5.15 Typical Electronic/Digital Aircraft Systems	MEA228C, 230B, 232B
Module 6 Materials and Handling	
6.1 Aircraft Materials – Ferrous	MEA109B
6.2 Aircraft Materials – Non-Ferrous	MEA109B
6.3 Aircraft Materials – Composite and Non-Metallic	MEA109B
6.4 Corrosion	MEA223C
6.5 Fasteners	MEA109B
6.6 Pipes and Unions	MEA109B
6.7 Springs	MEA109B
6.8 Bearings	MEA203C
6.9 Transmissions	MEA203C
6.10 Control Cables	MEA109B
6.11 Electrical Cables and Connectors	MEA201B, 246C
Module 7 Maintenance Practices	
7.1 Safety Practices – Aircraft and Workshop	MEA101B
7.2 Workshop Practices	MEA107B, 109B
7.3 Tools	MEA109B, 260B

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
7.4 Avionic General Test Equipment	MEA260B
7.5 Engineering Drawings, Diagrams and Standards	MEA107B
7.6 Fits and Clearances	MEA107B, 109B
7.7 Electrical cables and Connectors	MEA246C
7.8 Riveting	Not required
7.9 Pipes and Hoses	Not required
7.10 Springs	Not required
7.11 Bearings	Not required
7.12 Transmissions	Not required
7.13 Control Cables	Not required
7.14 Material Handling	Not required
7.15 Welding, Brazing, Soldering and Bonding (a) only	MEA201B
7.16 Aircraft Weight and Balance (a) only	MEA241B
7.17 Aircraft Handling and Storage	MEA301C
7.18 Disassembly, Inspection, Repair and Assembly Techniques	MEA227C, 228C, 229C, 230B, 232B, 235B
7.19 Abnormal Events	MEA112B
7.20 Maintenance Procedures	MEA112B
Module 8 Basic Aerodynamics	
8.1 Physics of the Atmosphere	MEA228C, 230B
8.2 Aerodynamics	MEA230B

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
8.3 Theory of Flight	MEA230B
8.4 Flight Stability and Dynamics	MEA230B
Module 9 Human Factors	MEA103B, 113C
Module 10 Aviation Legislation	MEA111B
Module 13 Aircraft Aerodynamics, Structures and Systems	
13.1 Theory of Flight	MEA230B or 218B
13.2 Structures – General Concepts	MEA103B, 203C, 223C
13.3 Autoflight	MEA230B or 231B
13.4 Communication/Navigation	MEA228C, 229C, 232B
13.5 Electrical Power	MEA223C
13.6 Equipment and Furnishings	MEA226C
13.7 Flight Controls	MEA223C, 230B, 235B or 211C, 231B, 235B
13.8 Instrument Systems	MEA227C, 228C
13.9 Lights	MEA223C
13.10 On Board Maintenance Systems	MEA228C
13.11 Air conditioning and cabin pressurisation	MEA223C, 227C
13.12 Fire protection	MEA223C, 227C
13.13 Fuel systems	MEA223C, 227C, 301C
13.14 Ice and rain protection	MEA223C, 227C
13.15 Integrated modular avionics	MEA226C, 228C

Syllabus Reference B2 Licence	Units of Competency Providing Full Coverage
13.16 Cabin intercommunication data systems	MEA226C, 229C
13.17 Cabin network services	MEA226C, 229C
13.18 Information systems such as air traffic and information management systems and network server systems	MEA226C, 229C
13.19 Indications and warning	MEA223C, 227C
Module 14 Propulsion	
14.1 Turbine Engines	MEA227C, 224B
14.2 Engine Indicating Systems	MEA224B

MEA20410 Certificate II in Aeroskills

Modification History

Not applicable.

Description

Qualification Notes

This qualification may be of use to employees of aviation maintenance workshops who are required to perform repair and overhaul tasks on a limited range of aircraft electrical, hydraulic, pneumatic, electro-hydraulic and electro-pneumatic components, or who perform simple repairs on a limited range of structural components.

Units of competency that comprise this qualification are a mix of common units that apply to all technical employment streams covered by the Aeroskills Training Package (core units) and technical stream units that are specific to a technical employment stream (elective units).

The qualification provides significant credits towards higher level Aeroskills Certificates.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Communication	• Understanding work and organisational instructions • Seeking guidance and describing clearly faults, problems and spares requirements • Negotiating with team members regarding timing and progress of work activities • Understanding and interpreting procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with supervisors, qualified persons providing guidance and other team members who may be of different ages, gender, race, religion and political persuasion • Working effectively as a member of a team and gaining the trust and support of other team members
Problem-solving	• With qualified person guidance identifying problems and developing practical solutions to maintenance problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to obtain and apply dimensional and tolerance data and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback during competency development and job performance • Evaluating under guidance ideas that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards and adapting competencies to the performance of a range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to support and participate in the effective

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	introduction of new work practices
Planning and organising	Clarifying task objectives and required outcomes with supervisors and with qualified persons providing guidance
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of guidance required and the level of supervision exercised by supervisors - Identifying career paths beyond Certificate II, especially with regard to on-aircraft as an aircraft maintenance engineer or component repair and overhaul in workshops
Learning	- Taking advantage of learning opportunities that arise through expansion of the range of tasks and through organisational continuation training - Adapting competencies to accommodate new ideas and techniques - Using feedback from qualified persons and supervisors to identify ways in which competence can be improved
Technology	- Maintaining components and component parts that are within the scope of competencies and selecting applicable tools and equipment - Storing and caring for components, component parts, tools and support equipment - Using test equipment that is within the scope of competencies held - Amending print-based maintenance publications - Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

To be awarded Certificate II in Aeroskills, competency must be demonstrated in one of:

- Avionic: 12 units consisting of 8 Core units plus 3 units from Elective Group A and one unit from either Group B or Group C
- Mechanical: 12 units consisting of 8 Core units plus 3 units from Elective Group B and one unit from either of Groups A and C

- Structures: 11 units consisting of 8 Core units plus 2 units from Elective Group C and one unit from either of Groups A and B.

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA117A	Apply self in the aviation maintenance environment	Nil

Unit Code	Unit Title	Prerequisite
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Elective Units

Group A		
Unit Code	Unit Title	Prerequisite
MEA238B	Perform routine removal and installation of miscellaneous aircraft electrical hardware/components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA239B	Fabricate aircraft electrical looms and harnesses	MEA240B
MEA240B	Use electrical test equipment to perform basic electrical tests	MEA101B, 103B, 105B, 107B, 108B, 109B
Group B		
Unit Code	Unit Title	Prerequisite
MEA329B	Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA330B	Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA331B	Dismantle, inspect, maintain and assemble aircraft gas turbine engine	MEA101B, 103B, 105B, 107B, 108B, 109B

Group A		
	components or parts	
MEA332B	Dismantle, inspect, maintain and assemble aircraft mechanical components or parts	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA333B	Dismantle, inspect, maintain and assemble aircraft piston engine components or parts	MEA101B, 103B, 105B, 107B, 108B, 109B
Group C		
Unit Code	Unit Title	Prerequisite
MEA406B	Repair/modify aircraft non-primary structural sheetmetal components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA407B	Repair/modify aircraft non-primary structural non-metallic components	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA20510 Certificate II in Aircraft Line Maintenance

Modification History

Not applicable.

Description

Qualification Notes

This qualification is applicable to employees of airlines and other operators of piston, jet and turbo-propeller aircraft and helicopters who are required to hold a CASA A Licence to perform and certify a range of specified maintenance tasks that can be performed with the aircraft on a flight line or at the departure gate. On completion of the required maintenance tasks the individual is authorised to release the aircraft to service.

The qualification satisfies Civil Aviation Safety Authority (CASA) requirements for the grant, under Civil Aviation Safety Regulation Part 66 (and also the equivalent transitional arrangements under CAO 100.66), of an Aircraft Maintenance Engineer A Licence when:

- the skills and knowledge requirements align with CASA syllabus requirements described under 'Licensing' in the Assessment Guidelines and in Appendix 1
- training has been delivered in accordance with the requirements of Civil Aviation Safety Regulation Part 147 (or CAO 100.66 during the transitional period).

The units of competency that comprise this qualification consist of a mix of:

- Common Units that are applicable to all of the employment streams covered by the Aeroskills Training Package or are of an administrative nature relating to the CASA A Licence
- A combination of Avionic, Mechanical and Structures Technical Stream Units that apply to the range of tasks performed by the holders of CASA A Licences.

This qualification provides a number of credits towards higher level Aeroskills certificates and towards the Diploma of Aeroskills (Mechanical) which is required for the grant of a CASA B1 licence.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Seeking guidance and describing clearly faults, problems and spares requirements • Negotiating with maintenance controllers or supervisors regarding timing and progress of work activities • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance releases, other documentation and component tags • Reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to maintenance controllers or supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Working effectively as a member of a maintenance organisation and gaining the trust and support of other members of the organisation
Problem-solving	• Identifying problems and developing practical solutions to maintenance problems not fully covered by maintenance data that are within the scope of the CASA A Licence • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to obtain and apply dimensional and tolerance data and to convert values between systems of measurement

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Initiative and enterprise	• Adapting to new situations that arise as a consequence of revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback during competency development and job performance • Evaluating ideas that may result in modifications or changes to work processes within the scope of the CASA A Licence • Applying human factors to avoid maintenance errors and maintain quality standards and adapting competencies to the performance of the range of maintenance tasks that are within the scope of the CASA A Licence • Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	• Clarifying task objectives and required outcomes with maintenance controllers or supervisors
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors • Identifying career paths beyond Certificate II, especially with regard to progression to an applicable B1 Licence
Learning	• Taking advantage of learning opportunities that arise through type training and organisational continuation training • Adapting competencies to accommodate new ideas and techniques • Using feedback from supervisors to identify ways in which competence can be improved
Technology	• Maintaining aircraft within the scope of the CASA A Licence and selecting applicable tools and support equipment • Storing and caring for components, tools and support equipment • Using test equipment that is within the scope of the CASA A Licence • Amending print-based maintenance publications • Using on-board maintenance systems to identify maintenance requirements • Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

Competency must be demonstrated in 15 units of competency, as follows:

- 14 Core units made up of common, imported and technical stream units
- One unit from Elective Group A chosen according to the CASA A licence that is being sought

Core Units

Take all nine common and imported units listed below

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B

Unit Code	Unit Title	Prerequisite
MEA117A	Apply self in the aviation maintenance environment	Nil
MEA119B	Perform administrative processes to prepare for certification of civil aircraft A level line maintenance	All Certificate II units relevant to the applicable A Licence
MSAENV272B	Participate in environmentally sustainable work practices	Nil
MEA240B	Use electrical test equipment to perform basic electrical tests	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA264A	Remove and install aircraft electrical/avionic components during line maintenance	MEA265A
MEA265A	Remove and install general aircraft electrical hardware	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA344A	Remove and install aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA418A	Perform basic repair of aircraft internal fittings during line maintenance	MEA101B, 103B, 105B, 107B, 108B, 109B

Elective Units Group A

Unit Code	Unit Title	Prerequisite	Unit Applicability
MEA345A	Perform scheduled	MEA101B, 103B, 105B,	Mandatory where

Unit Code	Unit Title	Prerequisite	Unit Applicability
	line maintenance activities on gas turbine engine fixed wing aircraft	107B, 108B, 109B	A1 Licence is sought
MEA346A	Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft	MEA101B, 103B, 105B, 107B, 108B, 109B	Mandatory where A3 Licence is sought
MEA347A	Perform scheduled line maintenance activities on piston engine fixed wing aircraft	MEA101B, 103B, 105B, 107B, 108B, 109B	Mandatory where A2 Licence is sought
MEA348A	Perform scheduled line maintenance activities on piston engine rotary wing aircraft	MEA101B, 103B, 105B, 107B, 108B, 109B	Mandatory where A4 Licence is sought

MEA20610 Certificate II in Aircraft Surface Finishing

Modification History

Not applicable.

Description

Qualification Notes

This qualification would be applicable to employees of aircraft maintenance organisations or specialist aircraft surface finishing organisations who are involved in the stripping of old finishes and in the preparation of aircraft and aircraft component surfaces for the application of paint and other specialist surface finishes. A limited range of component removal and installation tasks related to surface finishing tasks may also be performed.

Units of competency that comprise this qualification are a mix of common units that are applicable to all employment streams at the Certificate II level plus a number of structures technical stream units that relate to aircraft surface finishing and minor repairs, plus a mechanical technical stream unit that provides optional multi-skilling.

The qualification provides a significant number of credits towards Surface finishing qualifications at Certificate III and IV levels. The common units also provide credit towards other Aeroskills qualifications and the elective units would count towards a Certificate II in Aeroskills.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Seeking guidance and describing clearly faults, problems and material requirements • Negotiating with team members regarding timing and progress of work activities • Understanding and interpreting procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with supervisors and other team members who may be of different ages, gender, race, religion and political persuasion Working effectively as a member of a team and gaining the trust and support of other team members
Problem-solving	• Identifying problems and developing practical solutions to problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Responding to emergencies or accidents in accordance with regulatory and organisational requirements Using mathematical techniques to obtain and apply dimensional and tolerance data and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback during competency development and job performance • Evaluating under guidance ideas that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	maintain quality standards and adapting competencies to the performance of a range of surface finishing tasks Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	Clarifying task objectives and required outcomes with supervisors
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of guidance required and the level of supervision exercised by supervisors Identifying career paths beyond Certificate II
Learning	- Taking advantage of learning opportunities that arise through expansion of the range of tasks and through organisational continuation training - Adapting competencies to accommodate new ideas and techniques Using feedback from peers and supervisors to identify ways in which competence can be improved
Technology	- Maintaining components and component parts that are within the scope of competencies and selecting applicable tools and equipment - Storing and caring for components, component parts, tools and support equipment - Amending print-based maintenance publications Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

Competency must be demonstrated in 12 or 13 units of competency, depending on the choice of specialist units. These units include 11 Core units consisting of common, imported and technical stream units plus either Elective Group A (one unit) or Group B (two units)

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA117A	Apply self in the aviation maintenance environment	Nil
MSAENV272B	Participate in environmentally sustainable work	Nil

Unit Code	Unit Title	Prerequisite
	practices	
MEA411A	Remove surface coatings from aircraft or aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA412A	Pre-treat aluminium alloy surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA413A	Seal aircraft and aircraft component structural seams	MEA101B, 103B, 105B, 107B, 108B, 109B

Elective Units

Group A		
Unit Code	Unit Title	Prerequisite
MEA330B	Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings	MEA101B, 103B, 105B, 107B, 108B, 109B
Group B		
Unit Code	Unit Title	Prerequisite
MEA406B	Repair/modify aircraft non-primary structural sheetmetal components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA407B	Repair/modify aircraft non-primary structural non-metallic components	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA30110 Certificate III in Aircraft Surface Finishing

Modification History

Not applicable.

Description

Qualification Notes

This qualification may apply to employees of aircraft maintenance organisations, or of specialist aircraft surface finishing organisations who are required to prepare the surfaces of aircraft and aircraft components for the application of surface finishes, apply paint, specialist finishes and decals or stencils. Also required is the application of aircraft registration markings, national markings and organizational logos.

The units of competency that comprise this qualification are a mix of:

- Common units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- Structures technical stream units relating to aircraft surface finishing
- Imported automotive units relating to the application of paint finishes.

This qualification fully articulates with MEA40910 Certificate IV in Aircraft Surface Finishing and the Common Units provide a number of credits towards other Aeroskills qualifications at Certificate III and IV levels.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation • Reading drawings relating to surface finishing schemes and maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes
Problem-solving	• Identifying problems in a timely manner and developing practical solutions to problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to apply finishing schemes and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from peers and supervisors • Evaluating ideas to ensure that technical and regulatory aspects

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	• Clarifying task objectives and required outcomes through discussion with supervisors and other team members • Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors • Collecting, analysing and organising information relating to assigned tasks and confirming the purpose and required work outcomes • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from supervisors and peers to identify ways in which competence can be improved • Mentoring new or more junior personnel • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating PPE and surface finishing equipment and ground support equipment and troubleshooting equipment faults • Testing the performance and calibration of surface finishing equipment

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	• Storing and caring for surface finishing equipment, PPE and support equipment • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

To be awarded Certificate III in Aircraft Surface Finishing, competency must be demonstrated in 17 Core units of competency. Units must be chosen as specified under the conditions set out below.

There are no elective units for this qualification.

Take all eight of the common and imported core units listed below

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry	MEA105B

Unit Code	Unit Title	Prerequisite
	documentation	
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Plus the nine core technical stream and imported units listed below

Unit Code	Unit Title	Prerequisite
MEA411A	Remove surface coatings from aircraft or aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA412A	Pre-treat aluminium alloy surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA413A	Seal aircraft and aircraft component structural seams	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA414A	Remove light corrosion	MEA101B, 103B, 105B, 107B, 108B, 109B
AURV229749A	Prepare spray painting materials and equipment	Nil
AURV329603DA	Apply air dry and polyurethane enamel refinishing materials	Nil

Unit Code	Unit Title	Prerequisite
MEA415A	Paint aircraft surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA416A	Apply aircraft identification markings, graphics and decals	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA417A	Apply specialty coatings to aircraft	MEA101B, 103B, 105B, 107B, 108B, 109B

MEA30310 Certificate III in Aircraft Life Support and Furnishing

Modification History

Not applicable.

Description

Qualification Notes

This qualification may be applicable to members of the Australian Defence Force and to employees of aircraft maintenance organisations who are maintaining aircraft and personal life support equipment and aircraft furnishings.

The qualification consists of a number of common units plus mandatory and elective technical stream units including a number of imported units dealing with explosive ordnance (pyrotechnics) safety and inspection, and with sewing, trimming and use of fabric adhesives.

The qualification articulates with MEA41110 Certificate IV in Aircraft Life Support and Furnishing and the common units and the elective Avionic, Mechanical and Structures Technical Stream Units provide a number of credits towards other Aeroskills Certificates at Certificate II, III and IV levels.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation • Reading drawings relating to life support and furnishing and maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution • Delivering briefings on the use of items of life support equipment and communicating with individuals being fitted with personal items of life support equipment
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes
Problem-solving	• Identifying problems in a timely manner and developing practical solutions to problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to manufacture fabric items and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from peers and supervisors

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	- Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Adapting competencies to the performance of a wide range of maintenance and life support equipment fitting tasks - Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with supervisors and other team members - Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors - Collecting, analysing and organising information relating to assigned tasks and confirming the purpose and required work outcomes - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors - Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training - Adapting competencies to accommodate new ideas and techniques - Using feedback from supervisors and peers to identify ways in which competence can be improved - Mentoring new or more junior personnel - Interpreting units of competency and applying them to attainment of identified career goals
Technology	Operating PPE and life support/furnishing maintenance equipment and ground support equipment and troubleshooting equipment faults

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	• Testing the performance and calibration of life support and furnishing equipment • Storing and caring for life support and furnishing equipment, PPE and support equipment • Amending various forms of maintenance data • Using computers and microfiche to obtain life support equipment and maintenance data and using computers to complete documentation

Packaging Rules**Packaging Rules**

To be awarded Certificate III in Aircraft Life Support and Furnishing, competency must be demonstrated in 21 units of competency, as follows:

- 9 Core units consisting of common and imported units
- 12 Elective units (chosen in accordance with the unit selection guidelines in Column 4) from the technical stream and imported units in Group A

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and	Nil

Unit Code	Unit Title	Prerequisite
	specifications	
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEM12001B	Use comparison and basic measuring devices	Nil
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Elective Units Group A

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
MEA240B	Use electrical test equipment to perform basic electrical tests	MEA101B, 103B, 105B, 107B, 108B, 109B	
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C	do not take with MEA317C
MEA317C	Remove and install pressurised aircraft structural and non-structural components	MEA302C, 303C	do not take with MEA304C

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
MEA411A	Remove surface coatings from aircraft or aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B	
MEA412A	Pre-treat aluminium alloy surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B	
MEA414A	Remove light corrosion	MEA101B, 103B, 105B, 107B, 108B, 109B	do not take with MEA419A
MEA416A	Apply aircraft identification markings, graphics and decals	MEA101B, 103B, 105B, 107B, 108B, 109B	
MEA419A	Inspect and repair/modify aircraft cabin/cockpit non-primary structure components	MEA101B, 103B, 105B, 107B, 108B, 109B	do not take with MEA414A
MEA501A	Maintain and fit Anti-G suits	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	
MEA502A	Maintain and fit helmets	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 240B	
MEA503A	Maintain and fit immersion suits	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, LMTPTF09BA	
MEA504A	Maintain and fit oxygen masks	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 240B	
MEA505A	Maintain and pack parachutes	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	
MEA506A	Maintain and pack survival inflatable life rafts and escape slides	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A	
MEA507A	Maintain, pack and fit survival inflatable	MEA101B, 103B, 105B,	

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
	buoyancy vests	107B, 108B, 109B, 118A	
MEA508A	Maintain, install and remove restraint systems	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A LMFSF2002A,	Elective
MEA509A	Manufacture, repair and alter aircraft related fabric components	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	
MEA510A	Maintain seat and pod electrical and electronic systems	MEA240B	
MEA511A	Operate and maintain sewing machines and overlockers	Nil	
PUADEFEO101C	Work safely with explosive ordnance	Nil	
PUADEFEO501C	Conduct explosive ordnance inspection	Nil	
AURV231208A	Carry out trimming of vehicle components	Nil	do not take with LMFUP3012A
AURV231268A	Select and apply trim/fabric materials and determine attachment methods	Nil	
AURV231368A	Select and apply trim/fabric adhesives	Nil	do not take with LMTTF2008A
LMFSF2001A	Cut single layer fabrics	Nil	
LMFSF2002A	Machine sew materials	Nil	
LMFUP3012A	Apply marine sewing and installation techniques	Nil	do not take with AURV231208A
LMTTF2008A	Use adhesives	Nil	do not take with AURV231368A

MEA40610 Certificate IV in Aeroskills (Avionics)

Modification History

Not applicable.

Description

This qualification may apply to employees of civil aviation maintenance organisations or to members of the Australian Defence Force who perform scheduled inspections, fault diagnosis and repair, and modification of aircraft electrical, instrument and radio systems and system components.

The qualification defines the exit from an apprenticeship and may apply to either aircraft maintenance performed on flight lines/ramps and in hangars, or to avionic component repair and overhaul performed in workshops. These outcomes are defined in two streams:

- aircraft maintenance stream
- component maintenance workshop stream.

The qualification consists of:

- common units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- avionic technical stream units relating to either aircraft avionic system and component maintenance or to component repair and overhaul
- one mechanical technical stream unit that is applicable to the aircraft maintenance stream.

Because of the wide application of this qualification there is considerable flexibility in the selection of technical stream units and individuals should be mindful of their future career aspirations when selecting units for, in particular, the aircraft maintenance stream. Provided that the correct elective units are selected, the qualification articulates with the MEA50110 Diploma of Aeroskills (Avionics) which qualifies individuals for the grant by CASA of a B2 Aircraft Maintenance Engineer Licence.

The qualification also provides credits towards the MEA50310 Diploma of Aviation Maintenance Management (Avionics) and the MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Providing guidance to others and clearly describing faults, problems and spares requirements • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Interpreting wiring diagrams and system schematics, and reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes and troubleshooting
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from peers and supervisors • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	• Clarifying task objectives and required outcomes through discussion with supervisors and other team members • Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators, such as the extent of oversight exercised by supervisors • Identifying career paths and training opportunities that will assist in attaining career goals

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from supervisors and peers to identify ways in which competence can be improved • Mentoring new or more junior personnel • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating aircraft and avionic systems, test equipment and ground support equipment and troubleshooting faults • Using on-board maintenance systems and using maintenance-related software • Operating automatic test stations • Testing the performance and calibration of components and test stations • Storing and caring for components, parts, tools, test equipment and support equipment • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging rules

To be awarded the Certificate IV in Aeroskills (Avionics) competency must be demonstrated in:

- **Aircraft Maintenance Stream**
 - **Eleven (11)** Core units consisting of common, imported and some avionic technical stream units
 - **thirteen (13)** Elective technical stream units chosen from Group A
 - Total: **twenty four (24)** units

OR

- **Component Maintenance Workshop Stream**
 - **twelve (12)** Core units consisting of common, imported and avionic technical stream units

- **three (3)** Elective technical stream units chosen from Group B
- Total: **fifteen (15)** units

Core Units (Aircraft Maintenance Stream)

Complete all **eleven (11)** mandatory common, technical stream and imported units listed below

Unit code	Unit title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, MEA105B, MEA107B, MEA108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B MEA260B
MEA260B	Use electrical test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Core Units (Component Maintenance Workshop Stream)

Complete all **twelve (12)** mandatory common, technical stream and imported units listed below

Unit code	Unit title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, MEA105B, MEA107B, MEA108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B MEA260B
MEA260B	Use electrical test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA261C	Use electronic test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Elective Units

Group A (Aircraft Maintenance Stream)

Choose **thirteen (13)** of the technical stream units listed below while observing the unit selection guidelines in column 4.

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
MEA202C	Remove and install basic aircraft electrical system components	MEA201B	Do not take with MEA203C
MEA203C	Remove and install advanced aircraft electrical system components	MEA201B	Do not take with MEA202C
MEA204C	Remove and install basic aircraft instrument system components	MEA201B	Do not take with MEA205C
MEA205C	Remove and install advanced aircraft instrument system components	MEA201B	Do not take with MEA204C
MEA206C	Remove and install aircraft basic radio communication and navigation system components	MEA201B	Elective
MEA207C	Remove and install aircraft electronic system components	MEA201B	Elective
MEA208C	Remove and install aircraft pressurisation control system components	MEA201B	Elective
MEA209C	Remove and install aircraft oxygen system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Elective
MEA210C	Inspect, test and troubleshoot basic aircraft electrical systems	MEA202C MEA246C	Do not take with MEA211C or with MEA223C and

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
	and components		MEA227C
MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components	MEA203C MEA246C	Do not take with MEA210C or with MEA223C and MEA227C
MEA212C	Inspect, test and troubleshoot basic aircraft instrument systems and components	MEA204C MEA246C	Do not take with MEA213C or with MEA224B and MEA228C
MEA213C	Inspect, test and troubleshoot advanced aircraft instrument systems	MEA205C MEA246C	Do not take with MEA212C or with MEA224B and MEA228C
MEA214C	Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components	MEA206C MEA246C	Do not take with MEA226C and MEA229C
MEA215C	Inspect, test and troubleshoot advanced aircraft communications systems and components	MEA206C MEA246C	Do not take with MEA226C and MEA229C
MEA216C	Inspect, test and troubleshoot instrument landing systems and components	MEA206C MEA207C MEA246C	Do not take with MEA226C and MEA229C
MEA217C	Inspect, test and troubleshoot fixed wing autopilot systems and components	MEA207C MEA246C	Take instead of MEA225B and MEA230B if only maintaining 3 axis autopilot system
MEA218C	Inspect, test and troubleshoot rotary wing autopilot systems and components	MEA207C MEA246C	Take instead of MEA231B if only maintaining an autopilot system
MEA219C	Inspect, test and troubleshoot aircraft pressurisation control systems and components	MEA208C MEA246C	Do not take with MEA224B and MEA228C
MEA220C	Inspect, test and troubleshoot aircraft primary radar systems and components	MEA207C MEA246C	Do not take with MEA226C and MEA232B

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components	MEA207C MEA246C	Do not take with MEA226C and MEA232B
MEA222C	Inspect, test and troubleshoot aircraft oxygen systems and components	MEA209C	Elective
MEA223C	Inspect aircraft electrical systems and components	MEA203C MEA246C	Do not take with MEA210C or MEA211C
MEA224B	Inspect aircraft instrument systems and components	MEA205C MEA208C MEA246C	Do not take with MEA212C or MEA213C
MEA225B	Inspect fixed wing aircraft automatic flight control systems and components	MEA207C MEA246C	Do not take with MEA217C
MEA226C	Inspect aircraft electronic systems and components	MEA207C MEA246C	Do not take with MEA213C, MEA214C or MEA15C
MEA227C	Test and troubleshoot aircraft electrical systems and components	MEA223C	Do not take with MEA211C
MEA228C	Test and troubleshoot aircraft instrument systems and components	MEA224B MEA226C	Do not take with MEA212C or MEA213C
MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components	MEA226C	Do not take with MEA214C, MEA215C or MEA216C
MEA230B	Test and troubleshoot fixed wing aircraft automatic flight control systems and components	MEA225B	Do not take with MEA217C
MEA231B	Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components	MEA207C MEA246C	Do not take with MEA218C

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
MEA232B	Test and troubleshoot aircraft pulse systems and components	MEA226C	Do not take with MEA220C or MEA221C
MEA233C	Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components	MEA207C MEA246C	Do not take with MEA226C and MEA228C
MEA234C	Inspect, test and troubleshoot aircraft global navigation systems and components	MEA206C MEA207C MEA246C	Do not take with MEA226C and MEA229C
MEA261C	Use electronic test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Elective
MEA262B	Modify/repair single layer printed circuit boards	MEA260B MEA261C	Do not take with MEA263B
MEA263B	Modify/repair multi-layer printed circuit boards	MEA260B MEA261C	Do not take with MEA262B
MEA274A	Maintain basic light aircraft electrical systems and components	MEA246C	Do not take with MEA202C, 203C, 210C, 211C - applicable only to basic light aircraft
MEA275A	Maintain basic light aircraft instrument systems and components	MEA246C	Do not take with MEA204C, 205C, 212C or 213C - applicable only to basic light aircraft
MEA276A	Maintain basic aircraft communication and radio navigation systems and components	MEA246C	Do not take with MEA206C, 214C, 289A - applicable only to basic light aircraft
MEA277A	Maintain twin engine aircraft electrical systems and components	MEA210C	Do not take with MEA211C

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
MEA278A	Inspect, test and troubleshoot instrument display systems and components	MEA207C, MEA246C	Do not take with MEA226C, 228C
MEA279A	Inspect, test and troubleshoot full authority digital engine control systems	MEA207C, MEA246C	Do not take with MEA230B
MEA280A	Inspect, test and troubleshoot flight management systems and components	MEA207C, MEA246C	Elective
MEA281A	Maintain light aircraft AC powered instrument systems and components	MEA246C	Do not take with MEA213C
MEA289A	Maintain basic light aircraft avionic systems and components	MEA246C	Do not take with MEA206C, 214C or 276A - applicable only to basic light aircraft
MEA290A	Fit avionic modification sheetmetal components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Elective - applicable only to small aircraft maintenance
MEA291A	Inspect, test and troubleshoot fixed wing single axis autopilot systems and components	MEA207C, MEA246C	Do not take with MEA217C
MEA301C	Perform aircraft flight servicing	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Elective
Group B (Component Maintenance Workshop Stream) Choose at least three (3) of the Avionic technical stream units listed below while observing			

Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
the unit selection guidelines in column 4.			
Unit code	Unit title	Prerequisite or co-requisite	Unit selection guidelines
MEA252B	Test, align and troubleshoot synchro and servo system components	MEA201B MEA260B MEA261C	Elective
MEA262B	Modify/repair single layer printed circuit boards	MEA260B MEA261C	Do not take with MEA263B
MEA263B	Modify/repair multi-layer printed circuit boards	MEA260B MEA261C	Do not take with MEA262B
MEA282A	Repair or overhaul aircraft pulse system components	MEA260B MEA261C	Elective
MEA283A	Repair or overhaul aircraft display, control and distribution system components	MEA260B MEA261C	Elective
MEA284A	Repair or overhaul aircraft instrument system components	MEA260B MEA261C	Elective
MEA285A	Repair or overhaul aircraft radio frequency communication and navigation system components	MEA260B MEA261C	Elective
MEA286A	Repair or overhaul aircraft electrical/electro-mechanical components	MEA201B MEA260B	Elective
MEA287A	Repair or overhaul aircraft oxygen system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Elective
MEA288A	Repair or overhaul aircraft audio and visual systems and reproducers	MEA260B MEA261C	Elective

MEA40710 Certificate IV in Aeroskills (Mechanical)

Modification History

Not applicable.

Description

This qualification may apply to employees of civil aviation maintenance organisations or to members of the Australian Defence Force who perform scheduled inspections, fault diagnosis and repair, and modification of airframes and airframe mechanical, hydraulic and pneumatic systems and components, and of aircraft engines and (where applicable) propellers.

The qualification defines the exit from an apprenticeship and may apply to either aircraft maintenance performed on flight lines/ramps and in hangars, or to airframe and engine component repair and overhaul performed in workshops. These outcomes are defined in two streams:

- aircraft maintenance stream
- component maintenance workshop stream.

The qualification consists of:

- common units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- mechanical and structures technical stream units relating to airframe and engine system and component maintenance
- mechanical technical stream units and a small number of avionic stream units that are applicable to the aircraft component maintenance workshop stream.

Because of the wide application of this qualification there is considerable flexibility in the selection of technical stream units and individuals should be mindful of their future career aspirations when selecting units for, in particular, the aircraft maintenance stream. Provided that the correct elective units are selected, the qualification articulates with the MEA50210 Diploma of Aeroskills (Mechanical) which qualifies individuals for the grant by CASA of a B1 Aircraft Maintenance Engineer Licence.

The qualification also provides credits towards the MEA50410 Diploma of Aviation Maintenance Management (Mechanical) and the MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Providing guidance to others and clearly describing faults, problems and spares requirements • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Interpreting wiring diagrams and system schematics, and reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes and troubleshooting
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	by maintenance data - Proposing solutions to problems as modifications or amendments to specified maintenance processes - Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines - Responding to emergencies or accidents in accordance with regulatory and organisational requirements - Using mathematical techniques to relate test results to system or component performance and to convert values between systems of measurement
Initiative and enterprise	- Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures - Varying work practices and behaviour as a result of performance feedback from peers and supervisors - Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Adapting competencies to the performance of a wide range of maintenance tasks - Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with supervisors and other team members - Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors - Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators, such as the extent of oversight exercised by

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	supervisors Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training - Adapting competencies to accommodate new ideas and techniques - Using feedback from supervisors and peers to identify ways in which competence can be improved - Mentoring new or more junior personnel - Interpreting units of competency and applying them to attainment of identified career goals
Technology	- Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults - Using on-board maintenance systems and using maintenance-related software - Maintaining aircraft systems, components and test stands - Performance testing of aircraft systems and engines - Storing and caring for components, parts, tools, test equipment and support equipment - Amending various forms of maintenance data - Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

To be awarded the Certificate IV in Aeroskills (Mechanical) competency must be demonstrated in:

- Aircraft Maintenance Stream**
 - Core common and imported units: **eight (8)** units
 - Elective technical stream units from Group A: **thirteen (13)** units
 - Total: **twenty one (21)** units

OR

- Component Maintenance Workshop Stream**

- Core common and imported units: **eight (8)** units
- Elective technical stream units from Group B: **six (6)** units
- Total: **fourteen (14)** units

Core Units (common to both streams)

Unit code	Unit title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, MEA105B, MEA107B, MEA108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Elective Units

Group A (Aircraft Maintenance Stream)

Choose **thirteen (13)** of the elective mechanical and structures technical stream units listed below while observing the unit selection guidelines in column 4.

Unit code	Unit title	Prerequisite	Unit selection guidelines
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B MEA260B	
MEA260B	Use electrical test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA301C	Perform aircraft flight servicing	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	

Unit code	Unit title	Prerequisite	Unit selection guidelines
MEA303C	Remove and install aircraft pneumatic system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C	Do not take with MEA317C
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302C	
MEA306C	Remove and install engines and engine system components	MEA302C	
MEA307C	Remove and install propeller systems and components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA308C	Remove and install rotary wing rotor and flight control system components	MEA302C	Alternate to both MEA305C and MEA307C - count as two units
MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and	MEA302C	Do not take with MEA318B and MEA320B

Unit code	Unit title	Prerequisite	Unit selection guidelines
	components		
MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA303C	Do not take with MEA318B and MEA320B
MEA311C	Inspect and repair/modify aircraft structures	MEA304C or MEA317C	Do not take with MEA339B or both MEA401B and MEA410B - count as 3 units
MEA312C	Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	MEA305C	Do not take with MEA318B and MEA321B
MEA313C	Inspect, test and troubleshoot piston engine systems and components	MEA306C	
MEA314C	Inspect, test and troubleshoot gas turbine engine systems and components	MEA306C	Do not take with MEA319B and MEA322B
MEA315C	Inspect, test and troubleshoot propeller systems and components	MEA307C	
MEA316C	Inspect, test and troubleshoot rotary wing rotor and control systems and components	MEA308C	Alternative to both of MEA312C and MEA315C - count as two units
MEA317C	Remove and install pressurised aircraft structural and non-structural	MEA302C MEA303C	Do not take with MEA304C

Unit code	Unit title	Prerequisite	Unit selection guidelines
	components		
MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	MEA302C MEA303C MEM305C	Do not take with MEA309C or MEA310C
MEA319B	Inspect gas turbine engine systems and components	MEA306C	Do not take with MEA314C
MEA320B	Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	MEA318B	Do not take with MEA309C or MEA310C
MEA321B	Test and troubleshoot aircraft fixed wing flight control systems and components	MEA318B	Do not take with MEA312C
MEA322B	Test and troubleshoot gas turbine engine systems and components	MEA319B	Do not take with MEA314C
MEA327B	Fabricate and/or repair aircraft mechanical components or parts	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Do not take with MEA328C
MEA328C	Maintain and/or repair aircraft mechanical components or parts	MEA302C MEA303C	Do not take with MEA327B

Unit code	Unit title	Prerequisite	Unit selection guidelines
MEA339B	Inspect, repair and maintain aircraft structures	MEA304C or MEA317C	Do not take with MEA311C or MEA401B and MEA410B - count as 2 units
MEA351A	Maintain airframe systems of basic light fixed wing aircraft	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Applicable only to basic light aircraft maintenance
MEA352A	Maintain basic rotary wing aircraft systems	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Applicable only to basic helicopter maintenance
MEA353A	Maintain basic light aircraft engines and propellers	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Applicable only to basic light aircraft and basic helicopter maintenance
MEA354A	Maintain light aircraft pneumatic systems	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Applicable only to small aircraft maintenance
MEA355A	Maintain light aircraft air cycle air	MEA201B MEA246C	Applicable only to small aircraft

Unit code	Unit title	Prerequisite	Unit selection guidelines
	conditioning systems		maintenance
MEA356A	Maintain light piston engine aircraft pressurisation systems	MEA201B MEA246C	Applicable only to small aircraft maintenance
MEA357A	Inspect, test and repair aircraft fabric surfaces	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA358A	Re-cover aircraft fabric surfaces	MEA357A	
MEA359A	Inspect and repair aircraft wooden structures	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	
MEA360A	Maintain aircraft diesel engines	MEA353A	
MEA361A	Maintain aircraft two stroke petrol engines	MEA353A	
MEA362A	Maintain aircraft vapour cycle air conditioning systems	MEA201B MEA246C	
MEA363A	Inspect, repair and maintain structures and related components of non-pressurised small aircraft	MEA101B MEA103B MEA105B MEA107B MEA108B	Do not take with MEA304C, 311C or 339B - applicable only to small aircraft - count as two units

Unit code	Unit title	Prerequisite	Unit selection guidelines
		MEA109B	
MEA364A	Maintain and/or repair small aircraft mechanical components or parts	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Do not take with MEA328C - applicable only to small aircraft
MEA366A	Perform borescope inspections	MEA313C or 314C or 322B	Additional unit where CASA borescope inspection authority required
MEA401B	Inspect aircraft structures	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B	Do not take with MEA311C or MEA339B
MEA410B	Maintain aircraft structure/components	MEA401B	Do not take with MEA311C or MEA339B

Group B (Component Workshop Stream)

Choose at least **six (6)** of the elective technical stream units listed below

Unit code	Unit title	Prerequisite
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B MEA103B MEA105B

Unit code	Unit title	Prerequisite
		MEA107B MEA108B MEA109B
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B MEA260B
MEA260B	Use electrical test equipment	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA380A	Repair and/or overhaul aircraft hydraulic system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA381A	Repair and/or overhaul aircraft pneumatic system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA382A	Repair and/or overhaul aircraft fuel system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA383A	Repair and/or overhaul gas	MEA101B

Unit code	Unit title	Prerequisite
	turbine engine air inlet and compressor components and/or modules	MEA103B MEA105B MEA107B MEA108B MEA109B
MEA384A	Repair and/or overhaul gas turbine engine combustion section components and/or modules	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA385A	Repair and/or overhaul gas turbine engine turbine and exhaust section components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA386A	Repair and/or overhaul gas turbine engine ancillary section components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA387A	Test gas turbine engines and engine modules after overhaul or repair	MEA383A MEA384A MEA385A MEA386A
MEA388A	Repair and/or overhaul piston engines	MEA101B MEA103B MEA105B

Unit code	Unit title	Prerequisite
		MEA107B MEA108B MEA109B
MEA389A	Repair and/or overhaul propellers	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA390A	Repair and/or overhaul rotary wing dynamic components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B
MEA391A	Repair and/or overhaul aircraft mechanical system components	MEA101B MEA103B MEA105B MEA107B MEA108B MEA109B

MEA40810 Certificate IV in Aeroskills (Structures)

Modification History

Not applicable.

Description

This qualification may apply to employees of civil aviation maintenance organisations or to members of the Australian Defence Force who are engaged in the repair and modification of aircraft structures. The qualification defines the exit from apprenticeship and may apply to work performed in hangars on the structure of complete aircraft and to work performed in workshops on structural components.

The training pathways provide for work on both metal and composite structure. In some cases, primarily in the General Aviation sector, individuals may be also required to work on aircraft with wooden structure and/or fabric covering. The applicable competencies are covered in units and MEA357A Inspect, test and repair aircraft fabric surfaces, MEA358A Recover aircraft fabric surfaces and MEA359A Inspect and repair aircraft wooden structures

The qualification consists of:

- Common and imported units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- Mandatory and elective mechanical technical stream units that provide a required degree of multi-skilling
- Mandatory structures technical stream units

The qualification also provides credits towards the MEA50410 Diploma of Aviation Maintenance Management (Mechanical) and the MEA60110 Advanced Diploma of Aviation Maintenance Management (Mechanical). A limited number of credits are also provided towards the MEA50210 Diploma of Aeroskills (Mechanical).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Interpreting wiring diagrams and system schematics, and reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes and troubleshooting
Problem-solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	procedures • Varying work practices and behaviour as a result of performance feedback from peers and supervisors • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	• Clarifying task objectives and required outcomes through discussion with supervisors and other team members • Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from supervisors and peers to identify ways in which competence can be improved • Mentoring new or more junior personnel • Interpreting units of competency and applying them to attainment of identified career goals

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Technology	• Repairing aircraft metal structure, selecting and using tools and support equipment • Repairing aircraft composite structure, selecting and using tools and support equipment • Determining the causes of aircraft structural damage • Removing and installing aircraft system components • Storing and caring for components, parts, tools, test equipment and support equipment • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules**Packaging Rules**

To be awarded Certificate IV in Aeroskills (Structures), competency must be demonstrated in 18 units of competency. These units must be chosen as follows:

- 16 Core units consisting of common, imported and technical stream units
- 2 Elective technical stream units from Group A

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance	Nil

Unit Code	Unit Title	Prerequisite
	industry manuals and specifications	
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA303C	Remove and install aircraft pneumatic system components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA327B	Fabricate and/or repair aircraft mechanical components or parts	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA401B	Inspect aircraft structures	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA402B	Fabricate aircraft structural components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA403B	Repair/modify aircraft structure	MEA401B, 402B
MEA404B	Disassemble and reassemble aircraft structure for major repair or modification	MEA403B
MEA405B	Repair/modify aircraft composite material	MEA401B

Unit Code	Unit Title	Prerequisite
	structure/components	
MSAENV272B	Participate in environmentally sustainable work practices	Nil

Elective Units Group A

Select two units while observing the unit selection guidelines in Column 4

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C	Take this unit or MEA317C
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302C	Take this unit or MEA308C
MEA308C	Remove and install rotary wing rotor and flight control system components	MEA302C	Alternate to MEA305C
MEA317C	Remove and install pressurised aircraft structural and non-structural	MEA302C, 303C	Alternate to MEA304C

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
	components		

MEA40910 Certificate IV in Aircraft Surface Finishing

Modification History

Not applicable.

Description

The qualification may apply to employees of aircraft repair and overhaul organisations or members of the Australian Defence Force engaged in either the supervision of aircraft surface finishing activities or working in an environment where a significant degree of multi-skilling is required in component removal and installation and/or the performance of a specified range of repair tasks.

The qualification consists of:

- Common and imported units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- Mandatory surface finishing technical stream and imported units that also apply at Certificate III level
- Elective units to be selected according to employment need from listed common units, mechanical and structures technical stream units and an imported unit.

The qualification also provides credits towards the MEA50410 Diploma of Aviation Maintenance Management (Mechanical) and the MEA60110 Advanced Diploma of Aviation Maintenance Management (Mechanical). A limited number of credits are also provided towards the MEA50210 Diploma of Aeroskills (Mechanical).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation • Reading drawings relating to surface finishing schemes and maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem-solving	• Identifying problems in a timely manner and applying a range of strategies to develop practical solutions to problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve individual and team-related problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to apply finishing schemes and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	to convert values between systems of measurement
Initiative and enterprise	- Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures - Varying work practices and behaviour as a result of performance feedback from peers and supervisors - Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Identifying and analysing alternative approaches to managing workplace issues and problems - Adapting competencies to the performance of a wide range of maintenance tasks - Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with supervisors and other team members - Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors - Collecting, analysing and organising information relating to assigned tasks and confirming the purpose and required work outcomes - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements - Allocating personnel and resources to tasks
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors - Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training - Adapting competencies to accommodate new ideas and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	techniques • Using feedback from supervisors and peers to identify ways in which competence can be improved • Mentoring new or more junior personnel • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating PPE and surface finishing equipment and ground support equipment and troubleshooting equipment faults • Testing the performance and calibration of surface finishing equipment • Storing and caring for surface finishing equipment, PPE and support equipment • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

To be awarded Certificate IV in Aircraft Surface Finishing, competency must be demonstrated in 21 units of competency. These units must be chosen as specified under the following conditions:

- 17 Core units consisting of common, technical stream and imported units
- 4 Elective units chosen from the technical stream and imported units in Group A

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B

Unit Code	Unit Title	Prerequisite
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil
MEA411A	Remove surface coatings from aircraft or aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA412A	Pre-treat aluminium alloy surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA413A	Seal aircraft and aircraft component structural seams	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA414A	Remove light corrosion	MEA101B, 103B, 105B, 107B, 108B, 109B

Unit Code	Unit Title	Prerequisite
AURV229749A	Prepare spray painting materials and equipment	
AURV329603DA	Apply air dry and polyurethane enamel refinishing materials	
MEA415A	Paint aircraft surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA416A	Apply aircraft identification markings, graphics and decals	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA417A	Apply specialty coatings to aircraft	MEA101B, 103B, 105B, 107B, 108B, 109B

Elective Units Group A

At least four of the following units selected in accordance with the unit selection guidelines in column four.

Unit Code	Unit Title	Prerequisite	Unit selection guidelines
MEA113B	Supervise civil aircraft maintenance activities and manage human resources in the workplace	Completion of applicable Certificate IV units	
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance		Must be taken if MEA113B or 140A selected
MEA140A	Supervise maintenance teams and perform maintenance quality inspections (this unit applicable to the ADF regulatory environment)	Appointment as an Independent Inspector or Maintenance Quality Inspector	
MEA240B	Use electrical test equipment to perform basic electrical tests		

Unit Code	Unit Title	Prerequisite	Unit selection guidelines
MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components	MEA101B, 103B, 105B, 107B, 108B, 109B	Take with MEA305C
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302B	
MEA405B	Repair/modify aircraft composite material structure/components	MEA401B	
MEM08013B	Prepare surfaces by abrasive blasting (advanced)		

MEA41110 Certificate IV in Aircraft Life Support and Furnishing

Modification History

Not applicable.

Description

This qualification may apply to members of the Australian Defence Force and to employees of civil aviation maintenance organisations who work at supervisor or team leader levels on the maintenance of aircraft and personal life support equipment and on the fabrication and maintenance of aircraft furnishings.

The qualification consists of:

- Mandatory common units that apply to all Aeroskills qualifications at Certificate III and IV levels and elective common units that relate to the regulatory system within which individuals are employed
- Elective technical stream units and imported units

The qualification provides a number of credits towards other Aeroskills qualifications at Certificate III and IV levels and a limited number of credits towards a Diploma or Advanced Diploma of Aviation Maintenance Management.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft, or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation • Reading drawings relating to aircraft life support and furnishing and maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem-solving	• Identifying problems in a timely manner and applying a range of strategies to develop practical solutions to problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve individual and team-related problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to apply finishing schemes and to convert values between systems of measurement

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Initiative and enterprise	- Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and procedures - Varying work practices and behaviour as a result of performance feedback from peers and supervisors - Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Identifying and analysing alternative approaches to managing workplace issues and problems - Adapting competencies to the performance of a wide range of maintenance tasks - Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with supervisors and other team members - Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors - Collecting, analysing and organising information relating to assigned tasks and confirming the purpose and required work outcomes - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements - Allocating personnel and resources to tasks
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors - Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training - Adapting competencies to accommodate new ideas and techniques

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	- Using feedback from supervisors and peers to identify ways in which competence can be improved - Mentoring new or more junior personnel - Interpreting units of competency and applying them to attainment of identified career goals
Technology	- Operating PPE and life support and furnishing equipment and ground support equipment and troubleshooting equipment faults - Testing the performance and calibration of life support and furnishing equipment - Storing and caring for life support and furnishing equipment, PPE and support equipment - Amending various forms of maintenance data - Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules

Packaging Rules

To be awarded Certificate IV in Aircraft Life Support and Furnishing, competency must be demonstrated in 26 units of competency, as follows:

10 Core common and imported units

1 Elective unit from the common units listed in Group A

15 Elective units from the technical stream and imported units listed in Group B

Core Units

Unit Code	Unit Title	Prerequisite
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry	Nil

Unit Code	Unit Title	Prerequisite
	manuals and specifications	
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA115A	Plan and implement aeronautical product maintenance activities	Nil
MEA116B	Apply occupational health and safety procedures at supervisor level	Nil
MEA118A	Conduct self in the aviation maintenance environment	Nil
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil

Elective Units

Group A

At least 1 of the following two units chosen in accordance with the unit selection guidelines in column 4

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
MEA114A	Certify aeronautical product maintenance		Applicable to those working under CASA Airworthiness Regulations
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections		Applicable to those working under ADF Airworthiness Regulations

Group B

15 of the technical stream and imported units listed below; selected in accordance with the pre-requisites in Column 3 and the unit selection criteria in Column 4.

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
MEA240B	Use electrical test equipment to perform basic electrical tests	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C	Elective - do not take with MEA317C
MEA317C	Remove and install pressurised aircraft structural and non-structural components	MEA302C, 303C	Elective - do not take with MEA304C
MEA411A	Remove surface coatings from aircraft or aircraft components	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective
MEA412A	Pre-treat aluminium alloy surfaces	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective
MEA414A	Remove light corrosion	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective - do not take with MEA419A
MEA416A	Apply aircraft identification markings, graphics and decals	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective
MEA419A	Repair/modify aircraft cabin/cockpit non-primary structure components	MEA101B, 103B, 105B, 107B, 108B, 109B	Elective - do not take with MEA414A
MEA501A	Maintain and fit Anti-G suits	MEA101B,	Elective

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
		103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	
MEA502A	Maintain and fit helmets	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 240B	Elective
MEA503A	Maintain and fit immersion suits	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, LMTPTF09BA	Elective
MEA504A	Maintain and fit oxygen masks	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 240B	Elective
MEA505A	Maintain and pack parachutes	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	Elective
MEA506A	Maintain and pack survival inflatable life rafts and escape slides	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A	Elective
MEA507A	Maintain, pack and fit survival inflatable buoyancy vests	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A	Elective
MEA508A	Maintain, install and remove restraint systems	MEA101B, 103B, 105B, 107B, 108B, 109B, 511A	Elective

Unit Code	Unit Title	Prerequisite	Unit Selection Guidelines
		LMFSF2002A,	
MEA509A	Manufacture, repair and alter aircraft related fabric components	MEA101B, 103B, 105B, 107B, 108B, 109B, 118A, 511A LMFSF2002A,	Elective
MEA510A	Maintain seat and pod electrical and electronic systems	MEA240B	Elective
MEA511A	Operate and maintain sewing machines and overlockers	Nil	Elective
PUADEFEO101C	Work safely with explosive ordnance	Nil	Elective
PUADEFEO501C	Conduct explosive ordnance inspection	Nil	Elective
MEM12001B	Use comparison and basic measuring devices	Nil	Mandatory
AURV231208A	Carry out trimming of vehicle components	Nil	Elective - do not take with LMFUP3012A
AURV231268A	Select and apply trim/fabric materials and determine attachment methods	Nil	Elective
AURV231368A	Select and apply trim/fabric adhesives	Nil	Elective - do not take with LMTTF2008A
LMFSF2001A	Cut single layer fabrics	Nil	Elective
LMFSF2002A	Machine sew materials	Nil	Elective
LMFUP3012A	Apply marine sewing and installation techniques	Nil	Elective - do not take with AURV231208A
LMTTF2008A	Use adhesives	Nil	Elective - do not take with AURV231368A

MEA41210 Certificate IV in Aeroskills (Armament)

Modification History

Not applicable.

Description

This qualification may apply to members of the Australian Defence Force who perform scheduled inspections, fault diagnosis and repair, and modification of aircraft egress, stores management and stores suspension systems and system components. It should be noted that employment in this field also involves the attainment of a range of competencies in the explosive ordnance field. The explosive ordnance units of competency are included in the PUA00 Public Safety Training Package and are not included in this qualification.

The qualification defines the exit from training and may apply to aircraft maintenance performed on flight lines and in hangars.

The qualification consists of:

- common units that apply to all Aeroskills specialist streams at Certificate III and IV levels
- avionic technical stream units relating to aircraft system and component maintenance
- one mechanical technical stream unit
- armament technical stream units.

The qualification provides a number of credits towards other Aeroskills Certificate IV qualifications and towards the MEA50310 Diploma of Aviation Maintenance Management (Avionics) and the MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding work and organisational instructions • Understanding input from specialist personnel and technical representatives • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with other team members or supervisors regarding timing and progress of work activities and access to sections of the aircraft or to equipment • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Completing maintenance documentation and component tags • Interpreting wiring diagrams and system schematics, and reading drawings relating to maintenance activities • Using computers to obtain maintenance data and complete documentation • Networking with other team members regarding work planning and execution
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting other team members with tasks and providing advice on work processes and troubleshooting
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data • Proposing solutions to problems as modifications or amendments to specified maintenance processes • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance and to convert values between systems of measurement
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, revised maintenance data, practices and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	procedures • Varying work practices and behaviour as a result of performance feedback from peers and supervisors • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices
Planning and organising	• Clarifying task objectives and required outcomes through discussion with supervisors and other team members • Monitoring the time taken to complete tasks against team requirements or targets provided by supervisors • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills with the aid of the self-assessment work sheets in the Log of Industrial Experience and Achievement and preparing for competency assessments • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and monitoring performance using indicators such as the extent of oversight exercised by supervisors • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from supervisors and peers to identify ways in which competence can be improved • Mentoring new or more junior personnel • Interpreting units of competency and applying them to attainment of identified career goals

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY**Technology**

- Operating aircraft stores management and suspension systems, test equipment and ground support equipment and troubleshooting faults
- Maintaining and changing configuration of aircraft stores management and suspension systems including the safe handling of components containing explosive ordnance
- Maintaining aircraft egress systems and components, including arming and disarming of egress systems
- Using on-board maintenance systems and using maintenance-related software
- Testing the performance and calibration of components
- Storing and caring for components, parts, tools, test equipment and support equipment
- Amending various forms of maintenance data
- Using computers and microfiche to obtain maintenance data and using computers to complete documentation

Packaging Rules**Packaging Rules**

To be awarded the Certificate IV in Aeroskills (Armament) competency must be demonstrated in **twenty one (22)** Core units of competency, consisting of:

- **eight (8)** common and imported units
- **fourteen (14)** Technical stream units.

There are no elective units of competency for this qualification.

Core Units

Unit code	Unit title	Prerequisites
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, MEA105B, MEA107B, MEA108B
MEA105B	Apply quality standards applicable to aviation	MEA101B, MEA107B

Unit code	Unit title	Prerequisites
	maintenance processes	
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MSAENV272B	Participate in environmentally sustainable work practices	Nil
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B, MEA103B, MEA105B, MEA107B, MEA108B, MEA109B
MEA203C	Remove and install advanced aircraft electrical system components	MEA201B
MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components	MEA203C, MEA246C
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B, MEA260B
MEA260B	Use electrical test equipment	MEA101B, MEA103B, MEA105B, MEA107B, MEA108B, MEA109B
MEA261C	Use electronic test equipment	MEA101B, MEA 103B, MEA105B, MEA107B, MEA108B, MEA 109B
MEA262B	Modify/repair single layer printed circuit boards	MEA260B, MEA261C
MEA301C	Perform aircraft flight servicing	MEA101B, MEA103B, MEA105B, MEA107B, MEA108B, MEA109B
MEA601A	Maintain aircraft egress systems	MEA101B, MEA103B,

Unit code	Unit title	Prerequisites
		MEA105B, MEA107B, MEA108B, MEA109B, PUADEFEO101C
MEA602A	Remove and install aircraft stores management system components	MEA101B, MEA103B, MEA105B, MEA107B, MEA108B, MEA109B, PUADEFEO101C
MEA603A	Remove and install aircraft stores suspension systems and components	MEA101B, MEA103B, MEA105B, MEA107B, MEA108A, MEA109B, PUADEFEO101C
MEA604A	Inspect, test and troubleshoot aircraft stores management systems and components	MEA602A
MEA605A	Inspect, test and troubleshoot aircraft stores suspension systems and components	MEA603A
PUADEFEO101B	Work safely with explosive ordnance	Nil

MEA50110 Diploma of Aeroskills (Avionics)

Modification History

Not applicable.

Description

The qualification applies to individuals seeking the grant of a Civil Aviation Safety Authority (CASA) B2 Aircraft Maintenance Engineer Licence covering the supervision, performance and certification of avionic maintenance on aircraft that are type-rated by CASA for maintenance purposes.

The qualification satisfies CASA requirements for the grant, under Civil Aviation Regulation Part 66, of Aircraft Maintenance Engineer Licence B2 (or equivalent interim maintenance authority under CAO 100.66) when the skills and knowledge requirements align with CASA syllabus requirements under 'Licensing' in the Assessment Guidelines and in Appendix 1, and training has been delivered in accordance with the requirements of Civil Aviation Safety Regulation Part 147 (or in accordance with the transitional requirements in CAO 100.66). It consists of:

- Common and technical stream units required at Certificate IV level in the aircraft maintenance stream
- Additional diploma level common and imported units that cover supervisor level OHS competency plus competencies required by CASA for the exercise of licence privileges
- Diploma level avionic technical stream units covering advanced fault diagnosis and aircraft weight and balance calculation.

Credits are also provided towards the MEA50310 Diploma of Aviation Maintenance Management (Avionics) and the MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics)

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions and Completing maintenance documentation and component tags • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance data and complete documentation and correspond using email • Networking with other maintenance managers and with maintenance controllers
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	competency development
Problem-solving	- Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems - Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes - Assisting with the resolution of complex problems as a team effort - Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines - Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements - Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance and to develop management solutions to problems
Initiative and enterprise	- Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures - Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers - Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Adapting competencies to the performance of a wide range of maintenance tasks - Contributing to a process of continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with managers and team members - Planning the use of resources and allocating personnel and resources to tasks - Monitoring the time taken to complete tasks against team requirements or targets provided by management - Assessing work requirements for quotations - Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	required work outcomes - Identifying contingency situations and taking action to resolve problems - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes or changes to maintenance practices - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision - Effectively manage personal work priorities and professional development - Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training - Adapting competencies to accommodate new ideas and techniques - Using feedback from subordinates, peers and managers to identify ways in which competence can be improved - Mentoring and providing on-job training and induction training to team members - Interpreting units of competency and applying them to attainment of identified career goals
Technology	- Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults - Using on-board maintenance systems and using maintenance-related software - Maintaining aircraft systems, components and test stands - Performance testing of aircraft systems and engines - Storing and caring for components, parts, tools, test equipment and support equipment - Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications - Amending various forms of maintenance data

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

Packaging Rules

To be awarded a Diploma of Aeroskills (Avionics) competency must be demonstrated in **31 or 32 units** of competency, depending on the choice of elective specialist units. These units consist of:

- 8 Core Diploma level (CASA licensing) units
- 22 Core common and technical stream units from Certificate IV that are mandatory for a CASA B2 licence
- Either Elective Group A (2 units) or Group B (one unit)

Core Units

Complete all 8 of the diploma level common, imported and avionic technical stream units listed below

Unit Code	Unit Title	Prerequisite Units
MEA111B	Perform administrative processes to prepare for the certification of civil aircraft maintenance	All Cert IV units listed below
MEA112B	Plan and implement civil aircraft maintenance activities	All Cert IV units listed below
MEA113C	Supervise civil aircraft maintenance activities and manage human resources in the workplace	All Cert IV units listed below
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation	Nil

Unit Code	Unit Title	Prerequisite Units
	maintenance	
MEA142A	Manage self in the aviation maintenance environment	Nil
MEA235B	Perform advanced troubleshooting in aircraft avionic maintenance	All Cert IV units listed below
MEA241B	Perform aircraft weight and balance calculations as a result of modifications	All Cert IV units listed below
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil

Plus the 22 Certificate IV common and avionic/mechanical technical stream units listed below

Unit Code	Unit Title	Prerequisite Units
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B

Unit Code	Unit Title	Prerequisite Units
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA203C	Remove and install advanced aircraft electrical system components	MEA201B
MEA205C	Remove and install advanced aircraft instrument system components	MEA201B
MEA206C	Remove and install aircraft basic radio communication and navigation system components	MEA201B
MEA207C	Remove and install aircraft electronic system components	MEA201B
MEA223C	Inspect aircraft electrical systems and components	MEA203C, 246C
MEA224B	Inspect aircraft instrument systems and components	MEA205C, 208C, 246C
MEA226C	Inspect aircraft electronic systems and components	MEA207C, 246C
MEA227C	Test and troubleshoot aircraft electrical systems and components	MEA223C
MEA228C	Test and troubleshoot aircraft instrument systems and components	MEA224B, 226C
MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components	MEA226C
MEA232B	Test and troubleshoot aircraft pulse systems and components	MEA226C

Unit Code	Unit Title	Prerequisite Units
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B, 260B
MEA260B	Use electrical test equipment	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA301C	Perform aircraft flight servicing	MEA101B, 103B, 105B, 107B, 108B, 109B

Elective Units

Plus specialist elective units from Group A or Group B as defined below.

Unit Code	Unit Title	Prerequisite Units
Group A		
MEA225B	Inspect fixed wing aircraft automatic flight control systems and components	MEA207C, 246C
MEA230B	Test and troubleshoot fixed wing aircraft automatic flight control systems and components	MEA225B
Group B		
MEA231B	Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components	MEA207C, 246C

MEA50210 Diploma of Aeroskills (Mechanical)

Modification History

Not applicable.

Description

The qualification applies to individuals seeking the grant of a Civil Aviation Safety Authority (CASA) B1 Aircraft Maintenance Engineer Licence covering the supervision, performance and certification of airframe, engine, electrical and structural maintenance on aircraft that are type-rated by CASA for maintenance purposes.

The requirement for the awarding of MEA50207 Diploma of Aeroskills (Mechanical) is demonstrated competency in listed competency units under the conditions set out below. The listed units also satisfy Civil Aviation Safety Authority (CASA) requirements for the grant, under Civil Aviation Regulation Part 66, of Aircraft Maintenance Engineer B1 Licences in sub-categories B1.1, 1.2, 1.3 and 1.4 (or the equivalent interim maintenance authority under CAO 100.66) when the skills and knowledge requirements align with CASA syllabus requirements in under 'Licensing' in the Assessment Guidelines and in Appendix 1, and training has been delivered in accordance with the requirements of Civil Aviation Safety Regulation Part 147 (or in accordance with the transitional requirements in CAO 100.66).

It consists of:

- Common and technical stream units required at Certificate IV level in the aircraft maintenance stream with electives determined by the desired licence sub-category
- Additional diploma level common units that cover supervisor level OHS competency plus competencies required by CASA for the exercise of licence privileges
- Diploma level mechanical technical stream units covering advanced fault diagnosis and aircraft weighing and weight and balance calculation.

The qualification also provides credits towards the MEA50410 Diploma of Aviation Maintenance Management (Mechanical) and the MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical)

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions and Completing maintenance documentation and component tags • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance data and complete documentation and correspond using email • Networking with other maintenance managers and with maintenance controllers
Teamwork	• Performing tasks as an individual while being responsive to supervisors and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Providing leadership and development of team commitment and dynamics

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	- Monitoring and assessing team performance and providing mentoring and performance feedback - Gaining the trust and confidence of team members and resolving conflict within the team - Providing team members with the opportunity for ongoing competency development
Problem-solving	- Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems - Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes - Assisting with the resolution of complex problems as a team effort - Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines - Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements - Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance and to develop management solutions to problems
Initiative and enterprise	- Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures - Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers - Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes - Applying human factors to avoid maintenance errors and maintain quality standards - Adapting competencies to the performance of a wide range of maintenance tasks - Contributing to a process of continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices
Planning and organising	- Clarifying task objectives and required outcomes through discussion with managers and team members - Planning the use of resources and allocating personnel and resources to tasks

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	- Monitoring the time taken to complete tasks against team requirements or targets provided by management - Assessing work requirements for quotations - Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes - Identifying contingency situations and taking action to resolve problems - Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	- Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones - Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes or changes to maintenance practices - Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision - Effectively manage personal work priorities and professional development - Identifying career paths and training opportunities that will assist in attaining career goals
Learning	- Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-job training - Adapting competencies to accommodate new ideas and techniques - Using feedback from subordinates, peers and managers to identify ways in which competence can be improved - Mentoring and providing on-job training and induction training to team members - Interpreting units of competency and applying them to attainment of identified career goals
Technology	- Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults - Using on-board maintenance systems and using maintenance-related software - Maintaining aircraft systems, components and test stands - Performance testing of aircraft systems and engines - Storing and caring for components, parts, tools, test equipment

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

Packaging Rules

To be awarded a Diploma of Aeroskills (Mechanical) competency must be demonstrated in 36 to 42 units, chosen as described below.

All B1 licence sub-categories require the following 28 or 29 units:

- 10 Core Diploma level (CASA licensing) common, technical stream and imported units
- 17 Core Certificate IV common and technical stream units
- Elective technical stream units in either Group A (one unit) or Group B (two units)

Depending on the CASA B1 licence sub-category being sought, **an additional 8 to 13 units** are required, up to a **maximum of 42 units for the qualification**. All units must be chosen as specified under the conditions set out below:

Group C Elective technical stream units required by CASA for a B1.1 licence - **11 or 13 units**

Group D Elective technical stream units required by CASA for a B1.2 licence - **12 units**

Group E Elective technical stream units required by CASA for a B1.3 licence - **9 units**

Group F Elective technical stream units required by CASA for a B1.4 licence - **8 units**

Core Units

Complete the 10 Diploma level common and mechanical technical stream units listed below

Unit Code	Unit Title	Prerequisite Units

Unit Code	Unit Title	Prerequisite Units
MEA111B	Perform administrative processes to prepare for the certification of civil aircraft maintenance	All Cert IV units listed below for applicable licence
MEA112B	Plan and implement civil aircraft maintenance activities	All Cert IV units listed below for applicable licence
MEA113C	Supervise civil aircraft maintenance activities and manage human resources in the workplace	All Cert IV units listed below for applicable licence
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance	Nil
MEA142A	Manage self in the aviation maintenance environment	Nil
MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance	All Cert IV units listed below for applicable licence
MEA325B	Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications	All Cert IV units listed below for applicable licence
MEA343B	Remove and install avionic system components	MEA211B or 227C
	Assess structural repair/modification requirements and evaluate structural repairs and modifications	All Cert IV units listed below for applicable licence
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil

Plus the following 17 Core Certificate IV common and avionic/mechanical technical stream units listed below which are mandatory for all B1 licence sub-categories

Unit Code	Unit Title	Prerequisite Units
MEA101B	Interpret occupational health and safety practices in aviation maintenance	Nil
MEA103B	Plan and organise aviation maintenance work activities	MEA101B, 105B, 107B, 108B
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, 107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, 108B
MEA118A	Conduct self in the aviation maintenance environment	Nil
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA203C	Remove and install advanced aircraft electrical system components	MEA201B
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B, 260B
MEA260B	Use electrical test equipment	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA301C	Perform aircraft flight servicing	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components	MEA101B, 103B, 105B, 107B, 108B, 109B

Unit Code	Unit Title	Prerequisite Units
MEA303C	Remove and install aircraft pneumatic system components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA306C	Remove and install engines and engine system components	MEA302C
MEA328C	Maintain and/or repair aircraft mechanical components or parts	MEA302C, 303C
MEA339B	Inspect, repair and maintain aircraft structures	MEA304C or 317C

Elective Units

Plus either Group A or Group B for all B1 licence sub-categories

Unit Code	Unit Title	Prerequisite or Co-requisite Units
Group A		
MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components	MEA203C, 246C
Group B		
MEA223C	Inspect aircraft electrical systems and components	MEA203C, 246C
MEA227C	Test and troubleshoot aircraft electrical systems and components	MEA223B, 246C

Plus units that are mandatory CASA requirements for individual licence sub-categories B1.1, B1.2, B1.3 and B1.4

Group C

To meet the criteria for the grant of a B1.1 Licence complete **eleven (11) or thirteen (13)** units listed below as specified in the unit selection guidelines in Column 4

Unit Code	Unit Title	Prerequisite or Co-requisite Units	Unit Selection Guidance
MEA208C	Remove and install pressurisation control system components	MEA201B	
MEA209C	Remove and install aircraft oxygen system components	MEA101B, 103B, 105B, 107B, 108B, 109B	
MEA219C	Inspect, test and troubleshoot pressurisation control systems and components	MEA208C, 246C	
MEA222C	Inspect, test and troubleshoot aircraft oxygen systems and components	MEA209C	
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302C	
MEA307C	Remove and install propeller systems and components	MEA101B, 103B, 105B, 107B, 108B, 109B	Mandatory for B1.1 where the rating sought includes propellers
MEA315C	Inspect, test and troubleshoot propeller systems and components	MEA307C	Mandatory unit for B1.1 where the rating sought includes propellers
MEA317C	Remove and install pressurised aircraft structural and non-structural components	MEA302C, 303C	
MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear	MEA302C, 303C and 305C	

Unit Code	Unit Title	Prerequisite or Co-requisite Units	Unit Selection Guidance
	systems and components		
MEA319B	Inspect gas turbine engine systems and components	MEA306C	
MEA320B	Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components	MEA318B	
MEA321B	Test and troubleshoot aircraft fixed wing flight control systems and components	MEA318B	
MEA322B	Test and troubleshoot gas turbine engine systems and components	MEA319B	

Group D

To meet the criteria for the grant of a B1.2 Licence complete **twelve (12)** units listed below

Unit Code	Unit Title	Prerequisite or Co-requisite Units
MEA208C	Remove and install pressurisation control system components	MEA201B
MEA209C	Remove and install aircraft oxygen system components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA219C	Inspect, test and troubleshoot pressurisation control systems and components	MEA208C, 246C
MEA222C	Inspect, test and troubleshoot aircraft	MEA209C

Unit Code	Unit Title	Prerequisite or Co-requisite Units
	oxygen systems and components	
MEA305C	Remove and install aircraft fixed wing flight control system components	MEA302C
MEA307C	Remove and install propeller systems and components	MEA101B, 103B, 105B, 107B, 108B, 109B
MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	MEA302C
MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA303C
MEA312C	Inspect, test and troubleshoot aircraft fixed wing flight control systems and components	MEA305C
MEA313C	Inspect, test and troubleshoot piston engine systems and components	MEA306C
MEA315C	Inspect, test and troubleshoot propeller systems and components	MEA307C
MEA317C	Remove and install pressurised aircraft structural and non-structural components	MEA302C, 303C

Group E

To meet the criteria for the grant of a B1.3 Licence complete **nine (9)** units listed below (noting that MEA308C and 316C each count as two units)

Unit Code	Unit Title	Prerequisite or Co-requisite Units
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C,
MEA308C	Remove and install rotary wing rotor and flight control system components	MEA302C
MEA309C	Inspect, test and troubleshoot aircraft	MEA302C

Unit Code	Unit Title	Prerequisite or Co-requisite Units
	hydro-mechanical and landing gear systems and components	
MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA303C
MEA316C	Inspect, test and troubleshoot rotary wing rotor and control systems and components	MEA308C
MEA319B	Inspect gas turbine engine systems and components	MEA306C
MEA322B	Test and troubleshoot gas turbine engine systems and components	MEA319B

Group F

To meet the criteria for the grant of a B1.4 Licence complete **eight (8)** units listed below (noting that MEA308C and 316C each count as two units)

Unit Code	Unit Title	Prerequisite or Co-requisite Units
MEA304C	Remove and install non-pressurised aircraft structural and non-structural components	MEA302C,
MEA308C	Remove and install rotary wing rotor and flight control system components	MEA302C
MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components	MEA302C
MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components	MEA303C
MEA313C	Inspect, test and troubleshoot piston engine systems and components	MEA306C
MEA316C	Inspect, test and troubleshoot rotary wing rotor and control systems and components	MEA308C

MEA50310 Diploma of Aviation Maintenance Management (Avionics)

Modification History

Not applicable.

Description

This qualification may be of use to individuals employed in aviation maintenance management fields in both the civil and Australian Defence Force regulatory environments in jobs such as avionic maintenance team leaders, maintenance planners, spares assessors, repairable item managers and technical authors. While a direct entry training pathway is provided it must be emphasised that many of the maintenance management positions applicable to the qualification have additional experience requirements specified in airworthiness regulations and only a limited range of employment opportunities may be available to those who do not have extensive prior aviation maintenance experience.

The qualification consists of:

- twelve (12) units from the Certificate IV in Aeroskills (Avionics) that provide a baseline of skills and knowledge
- eight (8) common units, three (3) of which are elective, that provide general competencies applicable to aviation maintenance managers
- four (4) para-professional avionic engineering units
- one imported sustainability unit

Credit is provided towards the MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and clearly describing faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Negotiating with potential suppliers of items of aeronautical product, piece parts and consumables • Negotiating with clients regarding the drafting of technical publications and maintenance data • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions and completing maintenance documentation and component tags • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance and maintenance management data, complete documentation and correspond using email • Networking with other maintenance managers and with others involved in maintenance-related integrated logistic support activities
Teamwork	• Performing tasks as an individual while being responsive to team members or colleagues and senior managers and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	• Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems • Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes • Assisting with the resolution of complex problems as a team effort • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance, to develop management solutions to problems, and in performing integrated logistic support procedures
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Planning and organising	• Clarifying task objectives and required outcomes through discussion with managers and team members • Planning the use of resources and allocating personnel and resources to tasks • Monitoring the time taken to complete tasks against team requirements or targets provided by management • Assessing work requirements for quotations • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying contingency situations and taking action to resolve problems • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes or changes to maintenance practices • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision • Effectively manage personal work priorities and professional development • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from subordinates, peers and managers to identify ways in which competence can be improved • Mentoring and providing on-the-job training and induction training to team members • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults • Using on-board maintenance systems and using

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	maintenance-related software • Maintaining aircraft systems, components and test stands • Performance testing of aircraft systems and engines • Storing and caring for components, parts, tools, test equipment and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules**Packaging Rules**

To be awarded a Diploma of Aviation Maintenance Management (Avionics) competency must be demonstrated in a total of **twenty three (23)** units. Those articulating from MEA40610 Certificate IV in Aeroskills (Avionics) will require **eleven (11)** units.

All units must be chosen as specified under the conditions set out below:

- 22 Core units consisting of 12 preliminary common and avionic technical stream units for those who do not have a Certificate IV in Aeroskills (Avionics) and 10 Core Diploma level common, engineering and imported units
- One Elective Diploma level common unit from Group A

Core Units

12 preliminary Certificate IV level units for those who do not have a Certificate IV in Aeroskills (Avionics)

Unit code	Unit title	Prerequisite units
MEA101B	Interpret occupational health and safety practices in aviation	Nil

Unit code	Unit title	Prerequisite units
	maintenance	
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA201B	Remove and install miscellaneous aircraft electrical hardware/components	MEA101B, MEA105B, MEA107B, MEA108B, MEA109B
MEA246C	Fabricate and/or repair aircraft electrical hardware or parts	MEA201B, MEA260B
MEA260B	Use electrical test equipment	MEA101B, MEA105B, MEA107B, MEA108B, MEA109B
MEA261C	Use electronic test equipment	MEA101B, MEA105B, MEA107B, MEA108B, MEA109B
MEA262B	Modify/repair single layer printed circuit boards	MEA260B, MEA261C
MEA270A	Lay out avionic systems	MEA101B, MEA107B, MEA109B
MEA271A	Lay out avionic flight management systems	MEA101B, MEA107B, MEA109B, MEA 270A

All must complete the following **five (5)** common Diploma units, **four (4)** para-professional engineering units and **one (1)** imported sustainability unit listed below.

Unit code	Unit title	Prerequisite units

Unit code	Unit title	Prerequisite units
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance	Nil
MEA121B	Manage aircraft/aeronautical product configuration	Nil
MEA133B	Communicate aviation technical and maintenance knowledge	Nil
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	Nil
MEA142B	Manage self in the aviation maintenance environment	Nil
MEA272A	Apply basic scientific principles and techniques in avionic engineering situations	Nil
MEA273A	Select and test avionic engineering materials	Nil
MEM30007A	Select common engineering materials	Nil
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	Nil
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil

Elective Units Group A

Plus **one (1)** of the following elective common units selected in accordance with the guidance provided in column four.

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA136A	Assess aviation spares and manage repairable items	MEA135A	Elective - for spares assessors and repairable item managers
MEA137A	Write aviation maintenance technical publications	MEA135A	Elective - for aviation technical authors
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	Nil	Elective - for supervisors within the Australian Defence Force regulatory system

MEA50410 Diploma of Aviation Maintenance Management (Mechanical)

Modification History

Not applicable.

Description

This qualification may be of use to individuals employed in aviation maintenance management fields in both the civil and Australian defence Force regulatory environments in jobs such as mechanical maintenance team leaders, maintenance planners, spares assessors, repairable item managers and technical authors. While a direct entry training pathway is provided it must be emphasised that many of the maintenance management positions applicable to the qualification have additional experience requirements specified in airworthiness regulations and only a limited range of employment opportunities may be available to those who do not have extensive prior aviation maintenance experience.

The qualification consists of:

- ten (10) units from MEA40710 Certificate IV in Aeroskills (Mechanical) that provide a baseline of skills and knowledge
- eight (8) common units, three (3) of which are elective, that provide competencies applicable to aviation maintenance managers
- four (4) para-professional aeronautical engineering units
- one imported sustainability unit

Credit is provided towards the MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical).

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Negotiating with potential suppliers of items of aeronautical product, piece parts and consumables • Negotiating with clients regarding the drafting of technical publications and maintenance data • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions and completing maintenance documentation and component tags • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance and maintenance management data, complete documentation and correspond using email • Networking with other maintenance managers and with others involved in maintenance-related integrated logistic support activities
Teamwork	• Performing tasks as an individual while being responsive to team members or colleagues and senior managers and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	• Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems • Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes • Assisting with the resolution of complex problems as a team effort • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance, to develop management solutions to problems, and in performing integrated logistic support procedures
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers • Evaluating ideas to ensure that technical and regulatory aspects have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Contributing to a process of continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Planning and organising	• Clarifying task objectives and required outcomes through discussion with managers and team members • Planning the use of resources and allocating personnel and resources to tasks • Monitoring the time taken to complete tasks against team requirements or targets provided by management • Assessing work requirements for quotations • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying contingency situations and taking action to resolve problems • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes or changes to maintenance practices • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision • Effectively manage personal work priorities and professional development • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from subordinates, peers and managers to identify ways in which competence can be improved • Mentoring and providing on-the-job training and induction training to team members • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults • Using on-board maintenance systems and using

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	maintenance-related software • Maintaining aircraft systems, components and test stands • Performance testing of aircraft systems and engines • Storing and caring for components, parts, tools, test equipment and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

Packaging Rules

To be awarded a Diploma of Aviation Maintenance Management (Mechanical) competency must be demonstrated in a total of **twenty one (21)** units. Those articulating from a Certificate IV in Aeroskills (Mechanical) will require only **eleven (11)** units

All units must be chosen as specified under the conditions set out below:

- 20 Core units consisting of 10 preliminary common and avionic technical stream units for those who do not have a Certificate IV in Aeroskills (Avionics) and 10 Core Diploma level common, engineering and imported units
- One Elective Diploma level common unit from Group A

Core Units

10 preliminary Certificate IV level units for those who do not have a Certificate IV in Aeroskills (Avionics)

Unit code	Unit title	Prerequisite units
MEA101B	Interpret occupational health and safety practices in aviation	Nil

Unit code	Unit title	Prerequisite units
	maintenance	
MEA105B	Apply quality standards applicable to aviation maintenance processes	MEA101B, MEA107B
MEA107B	Interpret and use aviation maintenance industry manuals and specifications	Nil
MEA108B	Complete aviation maintenance industry documentation	MEA105B
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance	MEA105B, MEA108B
MEA260B	Use electrical test equipment	MEA101B, MEA105B, MEA107B, MEA108B, MEA109B
MEA327B	Fabricate and/or repair aircraft mechanical components or parts	MEA101B, MEA105B, MEA107B, MEA108B, MEA109B
MEA340A	Lay out and set up aircraft systems	MEA101B, MEA107B, MEA109B
MEA341A	Apply basic aircraft design characteristics	MEA101B, MEA107B, MEA109B
MEA342A	Apply basic aircraft power plant design characteristics	MEA101B, MEA107B, MEA109B

Complete the following **five (5)** common Diploma units, **four (4)** para-professional engineering units and **one (1)** imported sustainability unit listed below.

Unit code	Unit title	Prerequisite units
MEA116B	Apply occupational health and safety procedures at supervisor level in aviation maintenance	Nil
MEA121B	Manage aircraft/aeronautical product configuration	Nil

Unit code	Unit title	Prerequisite units
MEA133B	Communicate aviation technical and maintenance knowledge	Nil
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	Nil
MEA142B	Manage self in the aviation maintenance environment	Nil
MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations	Nil
MEA350A	Select and test aeronautical engineering materials	Nil
MEM30007A	Select common engineering materials	Nil
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	Nil
MSAENV472B	Implement and monitor environmentally sustainable work practices	Nil

Elective Units Group A

Plus **one (1)** of the following elective common units selected in accordance with the guidance in column four.

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA136A	Assess aviation spares and manage repairable items	MEA135A	Elective - for spares assessors and repairable item managers
MEA137A	Write aviation maintenance technical	MEA135A	Elective - for aviation

Unit code	Unit title	Prerequisite units	Unit selection guidance
	publications		technical authors
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	Nil	Elective - for supervisors within the Australian Defence Force regulatory system

MEA60110 Advanced Diploma of Aviation Maintenance Management (Avionics)

Modification History

Not applicable.

Description

This qualification may be of use to individuals employed in managerial positions in both the civil and Australian Defence Force regulatory environments in the fields of avionic maintenance management and Integrated Logistic Support. It should also be noted that most of the maintenance management positions applicable to this qualification have airworthiness regulatory requirements regarding aviation maintenance experience. There is therefore no direct entry pathway to the qualification.

Individuals seeking this qualification must meet at least one of the following criteria:

- at least five years current avionic maintenance experience
- Maintenance Engineer Licence (Avionics) issued by CASA
- Certificate IV in Aeroskills (Avionics)
- Diploma of Aviation Maintenance Management (Avionics).

The qualification consists of:

- twenty four (24) common units and three (3) imported units, seventeen (17) of which are elective, that provide general competencies applicable to aviation maintenance managers
- four (4) para-professional avionic engineering units

With regard to the employability skills, due to the high proportion of electives required by this qualification, the industry/enterprise requirements described for each employability skill are representative of the aviation maintenance industry in general and may not reflect specific job roles. Learning and assessment strategies for this qualification should be based on the requirements of the units of competency for this qualification.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and clearly describing faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Negotiating with potential suppliers of items of aeronautical product, piece parts and consumables • Negotiating with clients regarding the drafting of technical publications and maintenance data • Negotiating with senior managers regarding issues, such as activity timelines and budgetary matters • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions, such as maintenance orders and compilation of maintenance documentation • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance and maintenance management data, complete documentation and correspond using email • Networking with other maintenance managers and with others involved in maintenance-related integrated logistic support

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	activities
Teamwork	• Performing tasks as an individual while being responsive to team members or colleagues and senior managers and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Matching team member skills and authorisations to the task and adapting to contingencies • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems • Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes • Assisting with the resolution of complex problems as a team effort • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance, to develop management solutions to problems, and in performing integrated logistic support procedures
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers • Evaluating ideas to ensure that technical and regulatory aspects

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Managing a process of innovation and continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices • Assessing risks and taking action to achieve a recognised benefit or advantage to the organisation as a consequence of revised processes and procedures • Evaluating software requirements and hardware enhancements
Planning and organising	• Clarifying task objectives and required outcomes through discussion with managers and team members • Planning the use of resources and allocating personnel and resources to tasks • Monitoring the time taken to complete tasks against team requirements or targets provided by management • Assessing work requirements for quotations • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying contingency situations and taking action to resolve problems • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements • Analysing customer requirements and organisational work capacity • Developing, managing and evaluating aircraft and component maintenance strategies and plans • Establishing clear task goals and deliverables • Reviewing or developing budgets and managing financial resources • Surveying and assessing organisational and customer needs
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes, changes to maintenance practices or in managing integrated logistic support activities • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision • Effectively manage personal work priorities and professional development • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from subordinates, peers and managers to identify ways in which competence can be improved • Mentoring and providing on-the-job training and induction training to team members • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults • Using on-board maintenance systems and using maintenance-related software • Maintaining aircraft systems, components and test stands • Performance testing of aircraft systems and engines • Storing and caring for components, parts, tools, test equipment and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

Packaging Rules

To be awarded an Advanced Diploma of Aviation Maintenance Management (Avionics), competency must be demonstrated in a total of **nineteen (19)** units, as described below.

- If a Diploma of Aviation Maintenance Management (Avionics) has been attained, **nine (9)** of the required units will be already held and the number of additional units required is **ten (10)**.
- In all other cases the number of units required is **nineteen (19)**.

All units must be chosen as specified under the conditions set out below:

- 15 Core units consisting of engineering, common and imported units
- 4 Elective units chosen from the common and imported units in Group A

Core Units

The **four (4)** para-professional engineering units listed below are mandatory for those who do not have a Diploma of Aviation Maintenance Management (Avionics).

Unit code	Unit title	Prerequisite units
MEA272A	Apply basic scientific principles and techniques in avionic engineering situations	Nil
MEA273A	Select and test avionic engineering materials	Nil
MEM30007A	Select common engineering materials	Nil
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	Nil

Complete the **eleven (11)** Advanced Diploma/Diploma common and imported units listed below (those with a Diploma of Aviation Maintenance Management (Avionics) will already have MEA121B, MEA133B, MEA135A and MEA142B).

Unit code	Unit title	Prerequisite units
MEA120B	Manage an aviation maintenance quality system	Nil

Unit code	Unit title	Prerequisite units
MEA121B	Manage aircraft/aeronautical product configuration	Nil
MEA123B	Manage aviation maintenance work environment policy and practices	Nil
MEA124B	Coordinate change programs in the aviation maintenance environment	Nil
MEA125B	Develop aviation maintenance personnel	Nil
MEA133B	Communicate aviation technical and maintenance knowledge	Nil
MEA134A	Establish, maintain and evaluate the organisation's occupational health and safety system	Nil
MEA135A	Use computers in aviation maintenance-related integrated logistic support activities	Nil
MEA141B	Manage risk in aviation maintenance	Nil
MEA142B	Manage self in the aviation maintenance environment	Nil
MSAENV672B	Develop workplace policy and procedures for environmental sustainability	Nil

Elective Units Group A

Plus **four (4)** of the elective Advanced Diploma/Diploma common and imported units listed below (those with a Diploma of Aviation Maintenance Management (Avionics) will already have **one (1)** of MEA136A, MEA137B and MEA140A). Units should be selected using the guidance in column 4.

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA115A	Plan and implement aeronautical product maintenance activities	Nil	
MEA122B	Manage aircraft/equipment system performance testing	MEA126B	
MEA126B	Manage aircraft maintenance activities	Nil	
MEA127B	Provide technical advice in the maintenance and management of aircraft and aeronautical product	MEA272A, MEA273A	Applicable to the CASA regulatory environment
MEA128B	Provide engineering advice in the modification, maintenance and management of aircraft systems	MEA272A, MEA273A	Applicable to the Australian Defence Force regulatory environment
MEA129A	Investigate technical aspects of aviation occurrences	Nil	Applicable to the Australian Defence Force regulatory environment
MEA130A	Manage deployed/detached aviation maintenance activities	Nil	Applicable to the Australian Defence Force regulatory environment
MEA131B	Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment	Nil	
MEA132A	Manage budgetary resources in the aviation maintenance environment	Nil	
MEA136A	Assess aviation spares and manage repairable items	MEA135A	
MEA137A	Write aviation maintenance technical publications	MEA135A	
MEA138B	Perform aviation maintenance technical publication management activities	MEA137B	

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA139A	Perform aviation maintenance-related integrated logistic support activities	Nil	
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	Nil	For supervisors within the Australian Defence Force regulatory system
MEA143B	Develop and manage maintenance error management programs	Nil	Applicable to the CASA regulatory environment
BSBMGT504A	Manage budgets and financial plans	Nil	Alternative to MEA132A and to PSPMNGT610A
PSPMNGT610A	Manage public sector financial resources	Nil	Alternative to MEA132A and to BSBMGT504A

MEA60210 Advanced Diploma of Aviation Maintenance Management (Mechanical)

Modification History

Not applicable.

Description

This qualification may be of use to individuals employed in managerial positions in both the civil and Australian Defence Force regulatory environments in the fields of mechanical maintenance management and Integrated Logistic Support. It should also be noted that most of the maintenance management positions applicable to this qualification also have airworthiness regulatory requirements regarding aviation maintenance experience. There is therefore no direct entry pathway to the qualification.

Individuals seeking this qualification must meet at least one of the following entry criteria:

- at least five years current aviation mechanical maintenance experience
- Maintenance Engineer Licence (Mechanical) issued by CASA
- Certificate IV in Aeroskills (Mechanical)
- Diploma of Aviation Maintenance Management (Mechanical).

The qualification consists of:

- twenty four (24) common units and three (3) imported units, seventeen (17) of which are elective, that provide general competencies applicable to aviation maintenance managers
- four (4) para-professional aeronautical engineering units

With regard to the employability skills, due to the high proportion of electives required by this qualification, the industry/enterprise requirements described for each employability skill are representative of the aviation maintenance industry in general and may not reflect specific job roles. Learning and assessment strategies for this qualification should be based on the requirements of the units of competency for this qualification.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	• Understanding complex directions from senior managers • Understanding input from professional engineers, specialist personnel and technical representatives • Liaising with maintenance personnel, aircrew and specialists regarding maintenance problems • Talking to senior managers about maintenance and maintenance management problems and making presentations • Providing guidance to others and describing clearly faults, problems and spares requirements • Negotiating with team members, senior managers and aircraft owners/operators regarding timing and progress of work activities • Negotiating with potential suppliers of items of aeronautical product, piece parts and consumables • Negotiating with clients regarding the drafting of technical publications and maintenance data • Negotiating with senior managers regarding issues, such as activity timelines and budgetary matters • Understanding and interpreting regulations, procedures, instructions and maintenance publications • Giving written instructions, such as maintenance orders and compilation of maintenance documentation • Writing reports and proposals as required by regulations and organisational procedures • Interpreting organisational charts, wiring diagrams and system schematics, reading drawings relating to maintenance activities and interpreting fault diagnosis guides and logic charts • Using computers to obtain maintenance and maintenance management data, complete documentation and correspond using email • Networking with other maintenance managers and with others involved in maintenance-related integrated logistic support

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	activities
Teamwork	• Performing tasks as an individual while being responsive to team members or colleagues and senior managers and allowing for relevant human factors • Working effectively with others who may be of different ages, gender, race, religion and political persuasion • Assisting team members with task definition and providing advice on work processes and troubleshooting • Matching team member skills and authorisations to the task and adapting to contingencies • Providing leadership and development of team commitment and dynamics • Monitoring and assessing team performance and providing mentoring and performance feedback • Gaining the trust and confidence of team members and resolving conflict within the team • Providing team members with the opportunity for ongoing competency development
Problem solving	• Identifying problems in a timely manner and developing practical solutions to maintenance problems not fully covered by maintenance data and to maintenance management problems • Proposing solutions to problems as repair schemes, modifications or as amendments to specified maintenance processes • Assisting with the resolution of complex problems as a team effort • Constantly reviewing problem solving skills and ability to effectively apply competencies to solve problems within the limits permitted by regulatory and organisational guidelines • Responding to emergencies or accidents in accordance with legislative, regulatory and organisational requirements • Using mathematical techniques to relate test results to system or component performance, to convert values between systems of measurement, to calculate weight and balance, to develop management solutions to problems, and in performing integrated logistic support procedures
Initiative and enterprise	• Adapting to new situations that arise as a consequence of regulatory changes, technology, contractual requirements, personnel management changes, operational circumstances, revised maintenance data, practices and procedures • Varying work practices and behaviour as a result of performance feedback from subordinates, peers and managers • Evaluating ideas to ensure that technical and regulatory aspects

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	have been fully covered before proposing action that may result in modifications or changes to work processes • Applying human factors to avoid maintenance errors and maintain quality standards • Adapting competencies to the performance of a wide range of maintenance tasks • Managing a process of innovation and continuous improvement and a willingness to initiate, support and participate in the effective introduction of new work practices • Assessing risks and taking action to achieve a recognised benefit or advantage to the organisation as a consequence of revised processes and procedures • Evaluating software requirements and hardware enhancements
Planning and organising	• Clarifying task objectives and required outcomes through discussion with managers and team members • Planning the use of resources and allocating personnel and resources to tasks • Monitoring the time taken to complete tasks against team requirements or targets provided by management • Assessing work requirements for quotations • Collecting, analysing and organising information relating to assigned maintenance tasks and confirming the purpose and required work outcomes • Identifying contingency situations and taking action to resolve problems • Identifying the extent of impact on assigned work of changes in procedures, work instructions or regulatory requirements • Analysing customer requirements and organisational work capacity • Developing, managing and evaluating aircraft and component maintenance strategies and plans • Establishing clear task goals and deliverables • Reviewing or developing budgets and managing financial resources • Surveying and assessing organisational and customer needs
Self-management	• Accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • Assessing personal knowledge and skills when assisting team members with complex tasks and when proposing modifications, repair schemes, changes to maintenance practices or in managing integrated logistic support activities • Actively seeking opportunities to develop competencies and to apply them across a range of tasks and application of

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	legislation, regulations, policy and procedures to achieve required outcomes and build confidence in own ideas and vision • Effectively manage personal work priorities and professional development • Identifying career paths and training opportunities that will assist in attaining career goals
Learning	• Taking advantage of learning opportunities that arise through training courses provided by the organisation or external providers and through mentoring and on-the-job training • Adapting competencies to accommodate new ideas and techniques • Using feedback from subordinates, peers and managers to identify ways in which competence can be improved • Mentoring and providing on-the-job training and induction training to team members • Interpreting units of competency and applying them to attainment of identified career goals
Technology	• Operating aircraft and avionic systems, test equipment and ground support equipment, ground running engines and troubleshooting faults • Using on-board maintenance systems and using maintenance-related software • Maintaining aircraft systems, components and test stands • Performance testing of aircraft systems and engines • Storing and caring for components, parts, tools, test equipment and support equipment • Complying with requirements to complete maintenance records, develop and revise maintenance data and propose amendments to technical publications • Amending various forms of maintenance data • Using computers and microfiche to obtain maintenance data and using computers to complete records, reports and documentation

Packaging Rules

Packaging Rules

To be awarded an Advanced Diploma of Aviation Maintenance Management (Mechanical), competency must be demonstrated in a total of **nineteen (19)** units, as described below.

- If Diploma of Aviation Maintenance Management (Mechanical) has been achieved, the number of units required is **ten (10)**.
- In all other cases, the number of units required is **nineteen (19)**.

All units must be chosen as specified under the conditions set out below:

- 15 Core units consisting of engineering, common and imported units
- 4 Elective units chosen from the common and imported units in Group A

Core Units

The **four (4)** para-professional engineering units listed below are mandatory for those who do not have Diploma of Aviation Maintenance Management (Mechanical).

Unit code	Unit title	Prerequisite units
MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations	Nil
MEA350A	Select and test aeronautical engineering materials	Nil
MEM30007A	Select common engineering materials	Nil
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	Nil

Complete the **eleven (11)** Advanced Diploma/Diploma common units listed below (those with Diploma of Aviation Maintenance Management (Mechanical) will already have MEA121B, 133B, 135B and 142B).

Unit code	Unit title	Prerequisite units
MEA120B	Manage an aviation maintenance quality system	Nil
MEA121B	Manage aircraft/aeronautical	Nil

Unit code	Unit title	Prerequisite units
	product configuration	
MEA123B	Manage aviation maintenance work environment policy and practices	Nil
MEA124B	Coordinate change programs in the aviation maintenance environment	Nil
MEA125B	Develop aviation maintenance personnel	Nil
MEA133B	Communicate aviation technical and maintenance knowledge	Nil
MEA134B	Establish, maintain and evaluate the organisation's occupational health and safety system	Nil
MEA135B	Use computers in aviation maintenance-related integrated logistic support activities	Nil
MEA141B	Manage risk in aviation maintenance	Nil
MEA142B	Manage self in the aviation maintenance environment	Nil
MSAENV672B	Develop workplace policy and procedures for environmental sustainability	Nil

Elective Units Group A

Take **four (4)** of the elective Advanced Diploma/Diploma common units listed below (those with Diploma of Aviation Maintenance Management (Mechanical) will already have **one (1)** of MEA136B, MEA137A and MEA140A). Units should be selected using the guidance in column 4.

Unit code	Unit title	Prerequisite units	Unit selection guidance

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA115A	Plan and implement aeronautical product maintenance activities	Nil	
MEA122B	Manage aircraft/equipment system performance testing	MEA126B	
MEA126B	Manage aircraft maintenance activities	Nil	
MEA127B	Provide technical advice in the maintenance and management of aircraft and aeronautical product	MEA349A, MEA350A	Applicable to the CASA regulatory environment
MEA128B	Provide engineering advice in the modification, maintenance and management of aircraft systems	MEA349A, MEA350A	Applicable to the Australian Defence Force regulatory environment
MEA129A	Investigate technical aspects of aviation occurrences	Nil	Applicable to the Australian Defence Force regulatory environment
MEA130A	Manage deployed/detached aviation maintenance activities	Nil	Applicable to the Australian Defence Force regulatory environment
MEA131B	Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment	Nil	
MEA132B	Manage budgetary resources in the aviation maintenance environment	Nil	
MEA136B	Assess aviation spares and manage repairable items	MEA135B	
MEA137A	Write aviation maintenance technical publications	MEA135B	
MEA138B	Perform aviation maintenance technical publication management activities	MEA137A	

Unit code	Unit title	Prerequisite units	Unit selection guidance
MEA139A	Perform aviation maintenance-related integrated logistic support management activities	Nil	
MEA140A	Supervise aviation maintenance teams and perform maintenance quality inspections	Nil	For supervisors within the Australian Defence Force regulatory system
MEA143B	Develop and manage maintenance error management programs	Nil	Applicable to the CASA regulatory environment
BSBMGT504A	Manage budgets and financial plans	Nil	Alternative to MEA132B and PSPMNGT610A
PSPMNGT610A	Manage public sector financial resources	Nil	Alternative to MEA132B and BSBMGT504A

MEASS00001 Aircraft audio and visual system and reproducer repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment
	MEA262B	Modify/repair single layer printed circuit boards

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA288A	Repair or overhaul aircraft audio and visual systems and reproducers

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on audio and visual system and reproducer repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on audio and visual system and reproducer repair and overhaul

MEASS00002 Aircraft display, control and distribution system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA252B	Test, align and troubleshoot synchro and servo system components
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA262B	Modify/repair single layer printed circuit boards
	MEA283A	Repair or overhaul aircraft display, control and distribution system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on aircraft display, control and distribution system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on display, control and distribution system component repair and overhaul

MEASS00003 Aircraft egress system maintenance

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers these units as part of a Certificate IV in Aeroskills (Armament)

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
		maintenance
	MEA601A	Maintain aircraft egress systems
	PUADEFEO101C	Work safely with explosive ordnance

Target Group

Target Group	Individuals who wish to gain approval to maintain egress systems that contain explosive ordnance that are fitted to civil registered aircraft such as Warbirds

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the grant of an approval to perform maintenance on aircraft egress systems that contain explosive ordnance

MEASS00004 Aircraft pulse system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment
	MEA262B	Modify/repair single layer printed circuit boards

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA285A	Repair or overhaul aircraft radio frequency communication and navigation system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on aircraft pulse system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on pulse system component repair and overhaul

MEASS00005 Aircraft radio frequency communication and navigation system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment
	MEA262B	Modify/repair single layer printed circuit boards

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA285A	Repair or overhaul aircraft radio frequency communication and navigation system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on aircraft radio frequency communication and navigation system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on radio frequency communication and navigation system component repair and overhaul

MEASS00006 Airframe - B1 Licence Exclusion E10 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA359A	Inspect and repair aircraft wooden structures

Target Group

Target Group	Holders of CASA B1 licences endorsed with an airframe exclusion E10 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify aircraft wooden structure maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E10 from CASR Part 66 B1 licences

MEASS00007 Airframe - B1 Licence Exclusion E13 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components

Target Group

Target Group	Holders of CASA B1 licences endorsed with an airframe exclusion E13 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify hydraulic system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E13 from CASR Part 66 B1 licences

MEASS00008 Airframe - B1 Licence Exclusion E14 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA362A	Maintain aircraft vapour cycle air conditioning systems

Target Group

Target Group	Holders of CASA B1 licences endorsed with an airframe exclusion E14 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to

	certify vapour cycle air conditioning system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E14 from CASR Part 66 B1 licences

MEASS00009 Airframe - B1 Licence Exclusion E9 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA357A	Inspect, test and repair aircraft fabric surfaces

Target Group

Target Group	Holders of CASA B1 licences endorsed with an airframe exclusion E9 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify aircraft fabric surface maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E9 from CASR Part 66 B1 licences

MEASS00017 Airframe - B11 and 13 Licence Exclusion E15 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA355A	Maintain light aircraft air cycle air conditioning systems

Target Group

Target Group	Holders of CASA B1.1.and 1.3 licences endorsed with an airframe exclusion E15 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training

	Package units of competency that must be attained before being able to certify maintenance of air cycle air conditioning systems of unpressurised aircraft and helicopters.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E15 from CASR Part 66 B1.1 and 1.3 licences

MEASS00010 Airframe - B1.1 Licence Exclusion E15 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA303C	Remove and install aircraft pneumatic system components
	MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with an airframe exclusion E15 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in air cycle air conditioning systems of pressurised aircraft.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E15 from CASR Part 66 B1.1 licences

MEASS00011 Airframe - B1.1 Licence Exclusion E16 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA208C	Remove and install aircraft pressurisation control system components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA219C	Inspect, test and troubleshoot aircraft pressurisation control systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA260B	Use electrical test equipment
	MEA303C	Remove and install aircraft pneumatic system components
	MEA310C	Inspect, test and troubleshoot aircraft pneumatic systems and components
	MEA317C	Remove and install pressurised aircraft structural and non-structural components
	MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with an airframe exclusion E16 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in pressurisation systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E16 from CASR Part 66 B1.1 licences

MEASS00012 Airframe - B1.1 Licence Exclusion E2 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA303C	Remove and install aircraft pneumatic system components
	MEA305C	Remove and install aircraft fixed wing flight control system components
	MEA317C	Remove and install pressurised aircraft structural and non-structural components
	MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components
	MEA319B	Inspect gas turbine engine systems and components

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA320B	Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components
	MEA321B	Test and troubleshoot aircraft fixed wing flight control systems and components
	MEA322B	Test and troubleshoot gas turbine engine systems and components
	MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance
	MEA325B	Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications
	MEA328C	Maintain and/or repair aircraft mechanical components or parts
	MEA339B	Inspect, repair and maintain aircraft structures
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in airframe systems/structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from a CASR Part 66 B1.1 licence

MEASS00018 Airframe - B11 Licence Exclusion E2 Removal (when competencies are being gained on basic light aircraft with gas turbine engine)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA351A	Maintain airframe systems of basic light fixed wing aircraft
	MEA363A	Inspect, repair and maintain structure and related components of non-pressurised small aircraft
	MEA364A	Maintain and/or repair small aircraft mechanical components or parts
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on basic light aircraft airframe systems and structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from a CASR Part 66 B1.1 licence for maintenance of basic light aircraft with gas turbine engines

MEASS00013 Airframe - B1.2 Licence Exclusion E16 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA356A	Maintain light piston engine aircraft pressurisation systems

Target Group

Target Group	Holders of CASA B1.2 licences endorsed with an airframe exclusion E16 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify pressurisation system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E16 from CASR Part 66 B1.2 licences

MEASS00014 Airframe - B1.2 Licence Exclusion E2 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA304C	Remove and install non-pressurised aircraft structural and non-structural components
	MEA305C	Remove and install aircraft fixed wing flight control system components
	MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components
	MEA312C	Inspect, test and troubleshoot aircraft fixed wing flight control systems and components
	MEA325B	Weigh aircraft and perform aircraft

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
		weight and balance calculations as a result of modifications
	MEA328C	Maintain and/or repair aircraft mechanical components or parts
	MEA339B	Inspect, repair and maintain aircraft structures
	MEA354A	Maintain light aircraft pneumatic systems
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.2 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on airframe systems/structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from a CASR Part 66 B1.2 licence

MEASS00015 Airframe - B1.2 Licence Exclusion E2 Removal (when competencies are being gained on basic light aircraft)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA351A	Maintain airframe systems of basic light fixed wing aircraft
	MEA363A	Inspect, repair and maintain structure and related components of non-pressurised small aircraft
	MEA364A	Maintain and/or repair small aircraft mechanical components or parts
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.2 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on basic light aircraft airframe systems and structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from a CASR Part 66 B1.2 licence for basic light aircraft maintenance

MEASS00019 Airframe - B13 and B14 Licence Exclusion E2 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA303C	Remove and install aircraft pneumatic system components
	MEA304C	Remove and install non-pressurised aircraft structural and non-structural components
	MEA308C	Remove and install rotary wing rotor and flight control system components
	MEA309C	Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components
	MEA310C	Inspect, test and troubleshoot aircraft

Units	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
		pneumatic systems and components
	MEA316C	Inspect, test and troubleshoot rotary wing rotor and control systems and components
	MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance
	MEA325B	Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications
	MEA328C	Maintain and/or repair aircraft mechanical components or parts
	MEA339B	Inspect, repair and maintain aircraft structures
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.3 and B1.4 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in airframe systems/structure or being able to certify maintenance on airframe systems/structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from CASR Part 66 B1.3 and 1.4 licences

MEASS00016 Airframe - B1.4 Licence Exclusion E2 Removal (when competencies are being gained on basic helicopters)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA352A	Maintain basic rotary wing aircraft systems
	MEA363A	Inspect, repair and maintain structure and related components of non-pressurised small aircraft
	MEA364A	Maintain and/or repair small aircraft mechanical components or parts
	MEA365A	Assess structural repair/modification requirements and evaluate structural repairs and modifications

Target Group

Target Group	Holders of CASA B1.4 licences endorsed with an airframe exclusion E2 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on basic helicopter airframe systems/structure.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe exclusion E2 from CASR Part 66 B1.3 and 1.4 licences for basic helicopter maintenance

MEASS00020 Airframe/Engine - B1.1 and 1.2 Licence Exclusion E12 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA307C	Remove and install propeller systems and components
	MEA315C	Inspect, test and troubleshoot propeller systems and components

Target Group

Target Group	Holders of CASA B1.1 or 1.2 licences endorsed with an engine or airframe exclusion E12 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify propeller system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of airframe/engine exclusion E12 from CASR Part 66 B1.1 and 1.2 licences

MEASS00021 Borescope inspection approval

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers this unit as a skill set that meets regulatory requirements

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA366A	Perform borescope inspections

Target Group

Target Group	Qualified Aircraft Maintenance Engineers seeking approval to perform borescope inspections on aircraft engines

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	This competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the grant of an approval to perform borescope inspections on aircraft engines

MEASS00022 Composite structure maintenance

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers these units as part of a Certificate IV in Aeroskills (Structures)

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA401B	Inspect aircraft structures

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA405B	Repair/modify aircraft composite material structure/components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on mechanical system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the grant of an approval to perform maintenance on aircraft composite structures

MEASS00023 Electrical - B1.1 Licence Exclusions E1 and E4 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway		The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA223C	Inspect aircraft electrical systems and components
	MEA227C	Test and troubleshoot aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with electrical systems E1 and/or E4 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in electrical systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment		These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of electrical systems exclusions E1 and/or E4 from a CASR Part 66 B1.1 licence

MEASS00024 Electrical - B1.2, B1.3 or B1.4 Licence Exclusions E1 and E4 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment

Target Group

Target Group	Holders of CASA B1.2, 1.3 or B1.4 licences endorsed with electrical systems E1 and/or E4 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify electrical system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of electrical systems exclusions E1 and/or E4 from a CASR Part 66 B1.2, B1.3 or B1.4 licence

MEASS00025 Electrical - B2 Licence Exclusion E32 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA202C	Remove and install basic aircraft electrical systems and components
	MEA210C	Inspect, test and troubleshoot basic aircraft electrical systems and components
	MEA277A	Maintain twin engine aircraft electrical systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with electrical E32 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify

	maintenance of multi-generator power systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of electrical exclusion E32 from a CASR Part 66 B2 licence

MEASS00026 Electrical - B2 Licence Exclusions E1 and E4 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA223C	Inspect aircraft electrical systems and components
	MEA227C	Test and troubleshoot aircraft electrical systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with electrical systems E1 and/or E4 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in electrical systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of electrical systems exclusions E1 and/or E4 from a CASR Part 66 B2 licence

MEASS00027 Electrical - B2 Licence Exclusions E1 and E4 Removal (when competencies are being gained on basic light aircraft or helicopters)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA202C	Remove and install basic aircraft electrical systems and components
	MEA210C	Inspect, test and troubleshoot basic aircraft electrical systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with electrical systems E1 and/or E4 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on basic light aircraft and basic

	helicopter electrical systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of electrical systems exclusions E1 and/or E4 from a CASR Part 66 B2 licence for basic light aircraft and basic helicopter maintenance

MEASS00028 Electrical component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment
	MEA262B	Modify/repair single layer printed circuit boards

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA286A	Repair or overhaul aircraft electrical/electro-mechanical components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on electrical component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on electrical component repair and overhaul

MEASS00029 Electro- hydraulic component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA380A	Repair and/or overhaul aircraft hydraulic system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on electro-hydraulic component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on electro-hydraulic component repair and overhaul

MEASS00030 Electro-pneumatic component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA381A	Repair and/or overhaul aircraft pneumatic system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on electro-pneumatic component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on electro-pneumatic component repair and overhaul

MEASS00031 Engine - B1.2 or 1.4 Licence Exclusion E33 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA306C	Remove and install engines and engine system components
	MEA313C	Inspect, test and troubleshoot piston engine systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with engine E33 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify supercharging or turbocharging system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of engine exclusion E33 from a CASR Part 66 B1.2 or 1.4 licence

MEASS00032 Fuel system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA382A	Repair and/or overhaul aircraft fuel system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on fuel system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment in aircraft component maintenance workshops on fuel system component repair and overhaul

MEASS00033 Gas turbine engine air inlet and compressor module/component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA383A	Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on gas turbine engine air inlet and compressor module/component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on gas turbine engine air inlet and compressor module/component repair and overhaul

MEASS00034 Gas turbine engine ancillary section module/component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA386A	Repair and/or overhaul gas turbine engine ancillary section components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on gas turbine engine ancillary section module/component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on gas turbine engine ancillary section module/component repair and overhaul

MEASS00035 Gas turbine engine combustion section module/component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA384A	Repair and/or overhaul gas turbine engine combustion section components and/or modules

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on gas turbine engine combustion section module/component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on gas turbine engine combustion section module/component repair and overhaul

MEASS00036 Gas turbine engine turbine and exhaust module/component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA385A	Repair and/or overhaul gas turbine engine turbine and exhaust section components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on gas turbine engine turbine and exhaust module/component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on gas turbine engine turbine and exhaust module/component repair and overhaul

MEASS00037 Hydraulic system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA380A	Repair and/or overhaul aircraft hydraulic system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on hydraulic component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on hydraulic system component repair and overhaul

MEASS00038 In-flight entertainment system maintenance

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers these units as part of a Certificate II in Aircraft Line Maintenance

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA264A	Remove and install aircraft

Units	MEA101B	Interpret occupational health and safety practices in aviation maintenance
		electrical/avionic components during line maintenance
	MEA265A	Remove and install general aircraft electrical hardware

Target Group

Target Group	Individuals who are required to maintain aircraft in-flight entertainment systems (IFE)

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA, when combined with applicable IFE equipment vendor training, for the grant of an approval to perform maintenance on IFE

MEASS00039 Instrument - B1 Licence Exclusions E5 and E7 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA343B	Remove and install avionic system components

Target Group

Target Group	Holders of CASA B1 licences endorsed with instrument E5 and/or E7 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in instrument-related avionic systems or before being able to certify maintenance in the case of non-rated aircraft types.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusions E5 and/or E7 from all CASR Part 66 B1 licences

MEASS00040 Instrument - B2 Licence Exclusion E27 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA291A	Inspect, test and troubleshoot fixed wing single axis autopilot systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E27 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify single axis autopilot system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusion E27 from a CASR Part 66 B2 licence

MEASS00041 Instrument - B2 Licence Exclusion E28 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA217C	Inspect, test and troubleshoot fixed wing autopilot systems and components
	Or, if helicopter systems are being maintained:	
	MEA218C	Inspect, test and troubleshoot rotary wing autopilot systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E28 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either

	undergoing specific type training or being able to certify multi-axis autopilot system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusion E28 from a CASR Part 66 B2 licence

MEASS00042 Instrument - B2 Licence Exclusion E29 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA205C	Remove and install advanced aircraft instrument system components
	MEA213C	Inspect, test and troubleshoot advanced aircraft instrument systems

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E29 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify remote indicating compass system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusion E29 from a CASR Part 66 B2 licence

MEASS00043 Instrument - B2 Licence Exclusion E30 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA233C	Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E30 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify inertial navigation and reference system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusion E30 from a CASR Part 66 B2 licence

MEASS00044 Instrument - B2 Licence Exclusion E31 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA208C	Remove and install aircraft pressurisation control system components
	MEA219C	Inspect, test and troubleshoot aircraft pressurisation control systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E31 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify pressurisation system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusion E31 from a CASR Part 66 B2 licence

MEASS00045 Instrument - B2 Licence Exclusions E5 and E7 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA205C	Remove and install advanced aircraft instrument system components
	MEA207C	Remove and install aircraft electronic system components
	MEA224B	Inspect aircraft instrument systems and components
	MEA225B	Inspect fixed wing aircraft automatic flight control systems and components
	MEA226C	Inspect aircraft electronic systems and components
	MEA228C	Test and troubleshoot aircraft instrument systems and components
	MEA230B	Test and troubleshoot fixed wing

Units	MEA205C	Remove and install advanced aircraft instrument system components
		aircraft automatic flight control systems and components
	MEA231B	Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components (may be taken instead of MEA225B and 230B where ratings sought are entirely helicopter)
	MEA235B	PERFORM ADVANCED TROUBLESHOOTING IN AIRCRAFT AVIONIC MAINTENANCE

Target Group

Target Group	Holders of CASA B2 licences endorsed with instrument E5 and/or E7 exclusions who wish to have the exclusions removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in instrument-related avionic systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument exclusions E5 and/or E7 from a CASR Part 66 B2 licence

MEASS00046 Instrument and Radio - B1 Licence Exclusion E6 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA343B	Remove and install avionic system components

Target Group

Target Group	Holders of CASA B1 licences endorsed with an instrument and radio E6 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in instrument-related avionic systems or before being able to certify maintenance in the case of non-rated aircraft types.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument and radio exclusion E6 from all CASR Part 66 B1 licences

MEASS00047 Instrument and Radio - B2 Licence Exclusion E6 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA205C	Remove and install advanced aircraft instrument system components
	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA207C	Remove and install aircraft electronic system components
	MEA224B	Inspect aircraft instrument systems and components
	MEA225B	Inspect fixed wing aircraft automatic flight control systems and components
	MEA226C	Inspect aircraft electronic systems and components

Units	MEA205C	Remove and install advanced aircraft instrument system components
	MEA228C	Test and troubleshoot aircraft instrument systems and components
	MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components
	MEA230B	Test and troubleshoot fixed wing aircraft automatic flight control systems and components
	MEA231B	Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components (may be taken instead of MEA225B and 230B where ratings sought are entirely helicopter)
	MEA232B	Test and troubleshoot aircraft pulse systems and components
	MEA235B	PERFORM ADVANCED TROUBLESHOOTING IN AIRCRAFT AVIONIC MAINTENANCE

Target Group

Target Group	Holders of CASA B2 licences endorsed with an instrument and radio E6 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in instrument and radio systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument and radio exclusion E6 from a CASR Part 66 B2 licence

MEASS00048 Instrument and Radio - B2 Licence Exclusion E6 Removal (Non-Type Rated Aircraft and Helicopters Only)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA205C	Remove and install advanced aircraft instrument system components
	MEA213C	Inspect, test and troubleshoot advanced aircraft instrument systems
	MEA289A	Maintain basic light aircraft avionic systems and components

Target Group

Target Group	Holders of CASA B2 licences involved only in the maintenance of non-type rated aircraft and helicopters whose licences are endorsed with an instrument and radio E6 exclusion and who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of

	competency that must be attained before being able to certify instrument and radio systems maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument and radio exclusion E6 from a CASR Part 66 B2 licence for maintenance of non-type rated aircraft and helicopters

MEASS00049 Mechanical and electro-mechanical instrument component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA252B	Test, align and troubleshoot synchro and servo system components
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA262B	Modify/repair single layer printed circuit boards
	MEA284A	Repair or overhaul aircraft instrument system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on mechanical and electro-mechanical instruments repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on mechanical and electro-mechanical instruments repair and overhaul

MEASS00050 Mechanical system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA391A	Repair and/or overhaul aircraft mechanical system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on mechanical system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on mechanical system component repair and overhaul

MEASS00051 Mechanical system component repair/overhaul/2

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA391A	Repair and/or overhaul aircraft mechanical system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on mechanical system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on mechanical system component repair and overhaul

MEASS00052 Oxygen system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA287A	Repair or overhaul aircraft oxygen system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on oxygen system component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on oxygen system component repair and overhaul

MEASS00053 Piston engine repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA388A	Repair and/or overhaul piston engines

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on aircraft piston engine repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on piston engine repair and overhaul

MEASS00054 Pneumatic system component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA381A	Repair and/or overhaul aircraft pneumatic system components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on pneumatic component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on pneumatic system component repair and overhaul

MEASS00055 Power Plant - B1.1 Licence Exclusion E3 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA306C	Remove and install engines and engine system components
	MEA307C	Remove and install propeller systems and components (applicable only where licence type ratings sought include propeller driven aircraft)
	MEA315C	Inspect, test and troubleshoot propeller systems and components (applicable only where licence ratings sought include propeller driven aircraft)
	MEA319B	Inspect gas turbine engine systems and components
	MEA322B	Test and troubleshoot gas turbine engine systems and components
	MEA323B	Perform advanced troubleshooting in

Units	MEA306C	Remove and install engines and engine system components
		aircraft mechanical maintenance

Target Group

Target Group	Holders of CASA B1.1 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific power plant type training.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.1 licence

MEASS00056 Power Plant - B1.2 Licence Exclusion E3 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA306C	Remove and install engines and engine system components
	MEA313C	Inspect, test and troubleshoot piston engine systems and components

Target Group

Target Group	Holders of CASA B1.2 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify piston engine maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.2 licence

MEASS00057 Power Plant - B1.2 Licence Exclusion E3 Removal (when competencies are being gained on basic light aircraft)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA353A	Maintain basic light aircraft engines and propellers

Target Group

Target Group	Holders of CASA B1.2 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on basic light aircraft engines and propellers.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.2 licence for maintenance of basic light aircraft engines and propellers

MEASS00058 Power Plant - B1.3 Licence Exclusion E3 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA306C	Remove and install engines and engine system components
	MEA319B	Inspect gas turbine engine systems and components
	MEA322B	Test and troubleshoot gas turbine engine systems and components
	MEA323B	Perform advanced troubleshooting in aircraft mechanical maintenance

Target Group

Target Group	Holders of CASA B1.3 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific power plant type training.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.3 licence

MEASS00059 Power Plant - B1.4 Licence Exclusion E3 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA306C	Remove and install engines and engine system components
	MEA313C	Inspect, test and troubleshoot piston engine systems and components

Target Group

Target Group	Holders of CASA B1.4 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify helicopter piston engine maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.4 licence

MEASS00060 Power Plant - B1.4 Licence Exclusion E3 Removal (when competencies are being gained on basic helicopters)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA353A	Maintain basic light aircraft engines and propellers

Target Group

Target Group	Holders of CASA B1.4 licences endorsed with a power plant exclusion E3 who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance on engines of basic helicopters.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of power plant exclusion E3 from a CASR Part 66 B1.4 licence for basic helicopter engine maintenance

MEASS00061 Propeller repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA389A	Repair and/or overhaul propellers

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on propeller repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on propeller repair and overhaul

MEASS00062 Radio - B1 Licence Exclusion E8 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA203C	Remove and install advanced aircraft electrical systems and components
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA343B	Remove and install avionic system components

Target Group

Target Group	Holders of CASA B1 licences endorsed with a radio E8 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in instrument-related avionic systems or before being able to certify maintenance in the case of non-rated aircraft types.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E8 from all CASR Part 66 B1 licences

MEASS00063 Radio - B1.2 and 1.4 Licence Exclusion E8 Removal (when competencies are being gained on basic light aircraft or helicopters)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts
	MEA260B	Use electrical test equipment
	MEA276A	Maintain basic aircraft communication and radio navigation systems and components

Target Group

Target Group	Holders of CASA B1.2 and 1.4 licences endorsed with a radio E8 exclusions who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of instrument and radio exclusion E6 from CASR Part 66 B1.2 and B1.4 licences for maintenance of basic light aircraft and helicopters.

MEASS00064 Radio - B2 Licence Exclusion E11 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install basic radio communication and navigation system components
	MEA215C	Inspect, test and troubleshoot advanced aircraft communications systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E11 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify audio CVR system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E11 from a CASR Part 66 B2 licence

MEASS00065 Radio - B2 Licence Exclusion E18 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA214C	Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E18 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify ADF system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E18 from a CASR Part 66 B2 licence

MEASS00066 Radio - B2 Licence Exclusion E19 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA214C	Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components
	Or the following two units in lieu of MEA214B:	
	MEA226C	Inspect aircraft electronic systems and components
	MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E19 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify VOR system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E19 from a CASR Part 66 B2 licence

MEASS00067 Radio - B2 Licence Exclusion E20 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA207C	Remove and install aircraft electronic system components
	MEA216C	Inspect, test and troubleshoot instrument landing systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E20 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either

	undergoing specific type training or being able to certify ILS system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E20 from a CASR Part 66 B2 licence

MEASS00068 Radio - B2 Licence Exclusion E21 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA220C	Inspect, test and troubleshoot aircraft primary radar systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E21 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify weather radar system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E21 from a CASR Part 66 B2 licence

MEASS00069 Radio - B2 Licence Exclusion E22 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E22 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify ATC transponder system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E22 from a CASR Part 66 B2 licence

MEASS00070 Radio - B2 Licence Exclusion E23 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E23 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify radio altimeter system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E23 from a CASR Part 66 B2 licence

MEASS00071 Radio - B2 Licence Exclusion E24 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E24 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify DME system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E24 from a CASR Part 66 B2 licence

MEASS00072 Radio - B2 Licence Exclusion E25 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA207C	Remove and install aircraft electronic system components
	MEA221C	Inspect, test and troubleshoot aircraft secondary radar systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E25 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either undergoing specific type training or being able to certify doppler system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E25 from a CASR Part 66 B2 licence

MEASS00073 Radio - B2 Licence Exclusion E26 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA207C	Remove and install aircraft electronic system components
	MEA234C	Inspect, test and troubleshoot aircraft global navigation systems and components

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E26 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before either

	undergoing specific type training or being able to certify satellite navigation system maintenance.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E26 from a CASR Part 66 B2 licence

MEASS00074 Radio - B2 Licence Exclusion E8 Removal

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
	MEA207C	Remove and install aircraft electronic system components
	MEA226C	Inspect aircraft electronic systems and components
	MEA229C	Test and troubleshoot aircraft radio frequency navigation and communications systems and components
	MEA232B	Test and troubleshoot aircraft pulse systems and components
	MEA235B	PERFORM ADVANCED TROUBLESHOOTING IN

Units	MEA206C	Remove and install aircraft basic radio communication and navigation system components
		AIRCRAFT AVIONIC MAINTENANCE

Target Group

Target Group	Holders of CASA B2 licences endorsed with a radio E8 exclusion who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before undergoing specific type training in radio systems.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E8 from a CASR Part 66 B2 licence

MEASS00075 Radio - B2 Licence Exclusion E8 Removal (when competencies are being gained on non-type rated aircraft and helicopters)

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills training Package MEA07 offers Certificate IV and Diploma qualifications in Aeroskills that include these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA289A	Maintain basic light aircraft avionic systems and components

Target Group

Target Group	Holders of CASA B2 licences involved only in the maintenance of non-type rated aircraft and helicopters whose licences are endorsed with an instrument and radio E8 exclusion and who wish to have the exclusion removed from their licence. This Skill Set covers the MEA07 Aeroskills Training Package units of competency that must be attained before being able to certify radio systems maintenance on non-type rated aircraft.

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements of CASA for the removal of radio exclusion E8 from a CASR Part 66 B2 licence for maintenance of non-type rated aircraft and helicopters

MEASS00076 Rotary wing dynamic component repair/overhaul

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

Pathway	The Aeroskills Training Package MEA07 offers a Certificate IV qualification in Aeroskills that includes these units.

Licensing/Regulatory Information

Not applicable.

Skill Set Requirements

Units	MEA108B	Complete aviation maintenance industry documentation
	MEA145A	Conversion from allied trades for employment in aviation maintenance workshops
	MEA390A	Repair and/or overhaul rotary wing dynamic components

Target Group

Target Group	Individuals with Certificate III or Certificate IV qualifications in an allied trade who are to be employed in aircraft component maintenance workshops on rotary wing dynamic component repair and overhaul

Suggested words for Statement of Attainment

Suggested form of words for Statement of Attainment	These competencies from the Aeroskills Training Package MEA07 meet the requirements for employment of individuals with Certificate III or Certificate IV qualifications in an allied trade in aircraft component maintenance workshops on rotary wing dynamic component repair and overhaul

MEA101B Interpret occupational health and safety practices in aviation maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to comply with occupational health and safety (OH&S) regulations and work safely in aircraft maintenance areas and incorporates the requirements of NOHSC:7025(1998) Generic Competency A. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of OH&S practices relevant to aviation maintenance workplaces in order to ensure own safety and that of others in the workplace. Applications include the performance of maintenance activities on fixed or rotary wing aircraft on the flight line or tarmac, in the hanger including during functional testing of systems and in the workshop environment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret safe work practices.	1.1. <i>Relevant regulatory and enterprise policies and procedures</i> that identify the <i>requirements for conduct of safe work</i> are interpreted and understood. 1.2. Workplace housekeeping measures are identified in accordance with standard enterprise procedures. 1.3. Use of <i>personal protective equipment</i> and clothing is identified and understood and maintenance measures are interpreted and understood according to regulatory and enterprise procedures. 1.4. Safety signs and symbols are interpreted and understood, and their directions observed in accordance with enterprise and safety requirements.
2. Interpret reporting procedures for workplace hazards.	2.1. Workplace hazards are correctly identified and reporting procedures interpreted and understood according to standard enterprise procedures.
3. Interpret emergency procedures.	3.1. Method of contacting the appropriate personnel and emergency services in the event of an accident is

ELEMENT	PERFORMANCE CRITERIA
	appropriate to enterprise requirements. 3.2. Emergency and evacuation procedures are interpreted and understood to ensure safe conduct of personnel according to enterprise procedures. 3.3. Use of emergency equipment is correctly identified to comply with regulatory or enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- correctly interpreting OH&S regulations, instructions and procedures relevant to the range of applications listed in the Range Statement
- recognising and adhering to aerospace industry signage, including aircraft systems plumbing markings
- recognising and reporting to designated personnel hazardous situations in the workplace
- risk assessment and control
- selecting appropriate protective clothing for the maintenance activity being undertaken
- correct interpretation of enterprise and regulatory emergency procedures
- correct identification and operation of enterprise/industry specific workplace emergency equipment
- application of first aid procedures such as DRABC

Required knowledge

Look for evidence that confirms knowledge of:

- the applicable sources of OH&S requirements and procedures and their application in workplace situations as listed in the Range Statement
- how to recognise and report hazardous situations in the workplace
- methods of risk assessment and control
- the preferred order of ways to control risks (known as the hierarchy of control)
- work operations to control risks, e.g., permit to work systems such as confined space entry and isolation procedures
- how to determine requirements for personal protective equipment associated with

REQUIRED SKILLS AND KNOWLEDGE

- maintenance activities
- the correct selection and use of workplace emergency equipment
- action to be taken in emergency situations
- first aid procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to correctly interpret and apply all relevant OH&S procedures and standard processes in the aviation maintenance environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

This unit must be related in its assessment and application to all other units. The relationship between general workplace OH&S requirements, as included in enterprise procedures, and the relevant Federal and/or State and Territory legislation must be clearly linked.

Evidence of knowledge and skills associated with the application of OH&S standards is required to supplement evidence of ability to interpret and apply specific safe practices in the workplace.

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency under routine supervision on at least one item against each Group 1 to 10 (Groups 11 and 12 must also be included if applicable to the enterprise) as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry . The relationship between general workplace OH&S requirements, as included in enterprise procedures, and the relevant Federal and/or State and Territory legislation must be clearly linked.

Context of and specific resources for

This unit may be assessed on the job, off the job or a

EVIDENCE GUIDE	
assessment	combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. Should a demonstration of skill application be necessary, the candidate must have access to all necessary tools, equipment, materials and relevant documentation. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Requirements for conduct of safe work	The requirements for conduct of safe work may cover: 1. Applying general duty of care under OH&S legislation and common law 2. Fluid and gas high and low pressure systems including fluid handling (for example, hydraulic fluids, lubricants, compressed air, nitrogen and oxygen) 3. Fuelling/defuelling and working on fuel systems, including confined space entry

RANGE STATEMENT	
	4. Using and handling chemicals, including solvents, battery acids 5. Electrical systems, outlets and leads 6. Noise hazard areas and aircraft safety zones 7. Aircraft handling, towing, jacking, ground equipment operation and signage 8. Personal protection 9. First aid 10. Housekeeping and cleaning, waste disposal and FOD prevention practices and procedures 11. Aircraft strobe lighting 12. Ionising, non-ionising radiation equipment
Application	Application of this unit of competency relates to all aviation maintenance workplace environments.
Relevant regulatory and enterprise policies and procedures	Relevant regulatory and enterprise policies and procedures may be found in: • Commonwealth, State and Territory OH&S Acts, regulations and codes of practice, including regulations and codes of practice relating to hazards present in the workplace or industry • organisational safety manuals that specify provisions relating to roles and responsibilities of health and safety representatives and/or OH&S committees and provisions relating to OH&S issue resolution • maintenance organisation manual • procedures manuals • work instructions • relevant Defence Instructions • Civil Aviation Safety Regulations
Personal protective equipment and clothing requirements	Personal protective equipment and clothing requirements may be found in: • material safety data sheets • safety manual • procedures manual • maintenance manual • work instructions

RANGE STATEMENT	
	relevant defence instructions
Workplace hazards	Workplace hazards are correctly identified through: - checking equipment or the work area before work commences and during work - workplace inspections - housekeeping

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA103B Plan and organise aviation maintenance work activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is applicable to all Aeroskills maintenance training pathways. It covers the competencies required for planning and organising individual and group work activities. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of work planning and organising principles that are applied within the framework of defined single or multiple aviation maintenance tasks that involve more than one individual. Applications include flight line/tarmac, hangar and workshop maintenance tasks.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	<i>MEA101B</i>	<i>Interpret occupational health and safety practices in aviation maintenance</i>

Prerequisite units		
	MEA105B	<i>Apply quality standards applicable to aviation maintenance practices</i>
	MEA107B	<i>Interpret and use aviation maintenance industry manuals and specifications</i>
	MEA108B	<i>Complete aviation maintenance industry documentation</i>

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify task requirements.	1.1.Task requirements are determined or confirmed, and clarified to ensure correct interpretation of specifications or requirements.
2. Plan steps to complete task.	2.1.Task is interpreted and relevant steps are identified to ensure efficient conduct of work to meet specifications in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 2.2.Steps are planned in conjunction with the work of

ELEMENT	PERFORMANCE CRITERIA
	other personnel to allow achievement of practical outcomes, in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 2.3. Human factors are allowed for in planning of steps.
3. Organise work.	3.1. Work activity is organised with other involved personnel, allowing for relevant human factors and using relevant communication processes to ensure safe and appropriate sequencing of tasks. 3.2. All necessary documentation related to job planning and progress is completed, and recorded in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- the interpretation of information relating to the work activity from a range of industry manuals, industry and enterprise regulations and industry documentation
- consideration of OH&S regulations/precautions specific to the work activity and others working in the vicinity of the planned work activity, particularly with regard to electricity, gases (especially oxygen), oils and chemicals
- the use of Material Safety Data Sheets
- the application of human factors in planning maintenance activities

Required knowledge

Look for evidence that confirms knowledge of:

- the impact of human factors on the safe and effective performance of maintenance on aircraft and aircraft components.
- Material Safety Data Sheets
- the types of servicing performed on aircraft, i.e., scheduled and unscheduled maintenance activities, and their impact on planning aviation work activity.
- aircraft reference numbering systems as an aid to organising effective work activity

REQUIRED SKILLS AND KNOWLEDGE

in terms of related tasks and inspection/servicing zones.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able plan and organise work activities involving more than one person in the case of single and multiple tasks while allowing for human factors and observing all relevant OH&S procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The relationship between broader planning and organising requirements and service specific procedures must be clearly linked.

Evidence of underlying knowledge and skills associated with the general application of planning and organising while allowing for relevant human factors and OH&S requirements is required to supplement evidence of ability to integrate these processes in conjunction with other personnel in the workplace.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on single and multiple tasks involving more than one person. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, or by use of simulated activities, covering planning and organising situations applicable in the aircraft maintenance environment.

This unit must be related in its assessment and application to all other units, particularly those that apply to the actual maintenance of aircraft.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • team related activities • single or multiple tasks

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA105B Apply quality standards applicable to aviation maintenance processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is applicable to all Aeroskills Maintenance training pathways. It covers the competencies required to correctly apply quality standards applicable to the maintenance of aircraft and aircraft components, either individually, or as a member of a team. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of quality standards in the performance of aviation maintenance activities. Applications include flight line/tarmac, hangar and workshop maintenance tasks.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	<i>Interpret occupational health and safety practices in aviation</i>

Prerequisite units		
		<i>maintenance</i>
	<i>MEA107B</i>	<i>Interpret and use aviation maintenance industry manuals and specifications</i>

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret quality standards	1.1. Standards or specifications set out in maintenance documents and process specifications are identified and interpreted. 1.2. Enterprise quality requirements are identified and confirmed.
2. Apply quality standards	2.1. Standards are applied appropriately for individual and team related activities. 2.2. Defects within the quality system are detected and reported in accordance with standard procedures. 2.3. Documentation is handled and completed accurately and clearly to enable information to be easily read or interpreted.
3. Interpret quality	3.1. Performance monitoring measures are identified to ensure product or service standards are maintained or

ELEMENT	PERFORMANCE CRITERIA
improvement	improved.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- the application of workplace hazard reporting and identification procedures
- interpretation and application of information from a range of industry manuals, in particular, amendment status block information, amendment procedures, specification/modification leaflet applicability and changes to drawings
- the correct identification of aircraft hardware, materials and components by marking, part number, size and shape
- being able to differentiate the elements which constitute the system and able to identify processes, workplace regulations and ISO 9000 compliant documentation and specifications within the workplace environment

Required knowledge

Look for evidence that confirms knowledge of:

- typical quality systems and their operation in the workplace
- workplace quality documentation such as quality manuals, procedures manuals, work instructions and worksheets
- the relationship between the quality system and OH&S requirements such as workplace hazard reporting
- the relationship between the quality system and identification systems for aircraft hardware, materials and components

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	A person who demonstrates competency in this unit must be able to interpret and apply quality systems in the workplace and interface quality requirement with OH&S procedures and identification systems for aircraft hardware, materials and components.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The relationship between broader quality standards requirements and service specific procedures must be clearly linked. It is essential that actual and potential defects within the quality system are considered, together with ongoing abnormalities of equipment or systems as they affect the quality system. Evidence of underlying knowledge and skills associated with the general application of quality standards is required to supplement evidence of ability to integrate these processes in conjunction with other personnel in the workplace. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision in both single and multiple tasks involving more than one person. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or by use of simulated activities, covering the application of quality standards in situations within the aircraft maintenance environment. This unit must be related in its assessment and application to all other units.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • team related activities • single or multiple tasks

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA107B Interpret and use aviation maintenance industry manuals and specifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is applicable to all Aeroskills training pathways. It covers the competencies required to use and correctly interpret industry manuals, specifications and drawings used in the maintenance and manufacture of aircraft and aircraft components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of the information contained in industry manuals and specification in the performance of aviation maintenance activities Applications include on-aircraft and workshop related activities

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and access industry manuals, specifications and drawings.	1.1. <i>Appropriate manuals</i> are identified and accessed for the type of aircraft or component to be maintained. 1.2. Amendment status is clearly established to ensure the correct specifications and procedures are applied.
2. Interpret information.	2.1. Relevant chapter or section of manual or drawing is located in relation to the work to be carried out. 2.2. Information is interpreted and procedures to be followed are accurately determined.
3. Apply information.	3.1. Work steps are correctly identified in accordance with manual or specification procedures. 3.2. All correct sequencing and adjustments are interpreted in accordance with information contained in industry manuals or specifications.
4. Amend manuals, specifications or drawings.	4.1. Manual, specification or drawing changes and/or amendments are incorporated and documented correctly in accordance with <i>statutory regulations and/or enterprise procedures</i> .
5. Store manuals, specifications or drawings.	5.1. Manuals, specifications or drawings are stored appropriately to ensure prevention of damage, ready access and updating of information, when required,

ELEMENT	PERFORMANCE CRITERIA
	in accordance with regulatory and/or enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- accessing and interpreting information from industry manuals, including paper-based, microfiche or computer-based media, relating to work activities, including determination of manual amendment status, knowledge of manual structures and locating relevant information/instructions for work activity
- amending industry manuals to reflect current/approved amendment status.
- identifying and interpreting information from drawings and diagrams in aircraft maintenance manuals, including component scaling, section, assembly, location, drawing applicability and amendment status from the title block
- correct handling and storage of drawings, manuals and industry media, i.e. microfiche and digital formats
- calculating allowable dimension variations on a component from information in drawing title blocks and drawings
- calculating dimensions from drawings for the purpose of manufacturing aircraft components and hardware

Required knowledge

Look for evidence that confirms knowledge of:

- the types of industry manuals used in aviation maintenance and types of media
- requirements for custody and upkeep of industry manuals
- techniques for obtaining and applying data contained in industry manuals

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

EVIDENCE GUIDE	
Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to correctly interpret the information in industry manuals and specifications and apply that information during the performance of aviation maintenance tasks.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The transferability of general manual interpretation and use in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices must be clearly established. Evidence of underlying knowledge and skills associated with the interpretation and use of manuals is required to supplement understanding of the structure and regulatory requirements associated with the aircraft maintenance environment in this area. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one manual from each of Groups 1, 2 and 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or by use of simulated activities, covering the interpretation and use of Enterprise Aviation manuals, aircraft publications, process sheets, specifications and drawings applicable to the aircraft maintenance environment. This unit must be linked in its assessment and application to those that apply to the actual maintenance of aircraft.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note:	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Types of manual	<i>Appropriate manuals may include:</i> 1. Aircraft publications, maintenance instruction manuals, process specifications, servicing or service bulletins or structural repair manuals 2. Tooling or equipment manuals, manufacturer's manuals, standard practices, enterprise aviation regulations and publications 3. Illustrated parts catalogues, aircraft wiring manuals or drawings.
Statutory regulations and/or enterprise procedures	<i>Statutory regulations and/or enterprise procedures may include:</i> • civil aviation regulations or civil aviation safety regulations • applicable defence regulations and instructions • maintenance organisation manual • standing instructions
Application	Application of this unit may relate to both on-aircraft and workshop related activities in the aircraft maintenance environment.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA108B Complete aviation maintenance industry documentation

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is applicable to all Aeroskills training pathways. It covers the competencies required to correctly interpret, use and complete documentation associated with aircraft and aircraft component maintenance and manufacture. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the requirements for the completion and processing of documentation during, and on completion of, aviation maintenance activities

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance practices

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret documentation	1.1. <i>Documentation</i> requirements are determined and accessed, where necessary, from relevant sources in accordance with regulatory and enterprise procedures. 1.2. Information contained in existing documentation is interpreted correctly and, where necessary, requirements carried out in accordance with <i>regulatory and enterprise procedures</i>.
2. Complete documentation	2.1. Information requirements for new documentation or updating of existing documentation are determined to allow for accurate completion of records. 2.2. Documentation is completed accurately and clearly to enable information to be easily read or interpreted.
3. Store and distribute documentation	3.1. All procedures for storing and distributing documentation are followed to ensure ready access when required in accordance with regulatory and enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • identification and accurate completion of industry documentation associated with aircraft/aircraft component maintenance, repair, overhaul and modification activities, industry regulatory reports and OH&S hazard reporting formats • handling industry documentation appropriately to ensure that records are accurately processed, forwarded and/or stored as required by industry and enterprise regulations
Required knowledge
Look for evidence that confirms knowledge of: • maintenance practice terminology and the associated relationship with industry documentation, i.e. scheduled and unscheduled servicing, aircraft/component lifting, i.e. on condition, life expired, throwaway, repair, overhaul

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to correctly complete and process maintenance documentation applicable to maintenance tasks that are being performed.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that information generated in the process of completing paperwork is in a form which is acceptable to the workplace environment and regulatory requirements in accordance with the relevant aircraft publications/maintenance regulations/orders and standards and practices.

EVIDENCE GUIDE	
	Evidence of underlying knowledge and skills associated with the interpretation and completion of paperwork is required to supplement evidence of appropriate levels of literacy and numeracy, associated with presenting clear and concise information. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one type of documentation from each of Groups 1 and 2 from the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or by use of simulated activities, covering the interpretation, use and completion of aircraft maintenance documentation in the maintenance environment in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. This unit must be linked in its assessment and application to those that apply to the actual maintenance of aircraft.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to

RANGE STATEMENT	
	facilitate specification of the assessment requirements included in the Evidence Guide.
Documentation	<i>Documentation may include:</i> 1. Maintenance logs, overhaul test/check sheets, job history sheets, traveller cards, maintenance reports, irregularity reports, serviceable tags or removal tags 2. Material safety data sheets or material record sheets.
Regulatory and enterprise procedures	<i>Regulatory and enterprise procedures may be found in:</i> • civil aviation regulations or civil aviation safety regulations • maintenance organisation manual • procedures manual • work instructions • quality manual • safety manual • applicable defence regulations and instructions • standing instructions.
Application	Application of this unit may relate to on-aircraft and workshop related activities in the aircraft maintenance environment.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA109B Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is applicable to all Aeroskills Maintenance training pathways. It covers the competencies required to perform basic hand skills, apply standard trade practices and fundamentals relevant to the maintenance of aircraft and aircraft components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of basic hand skills and standard trade practices in the maintenance of aircraft and aircraft components. Applications include the use of hand and power tools, and the selection and use of aircraft hardware.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes

Prerequisite units		
	MEA108B	Complete aviation maintenance industry documentation

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess task requirements	1.1. Available information from relevant documentation and/or other sources, including communication with other personnel, is interpreted and assessed to determine the task and tooling requirements.
2. Select tools and/or equipment	2.1. Hand and/or power tools or equipment are selected for appropriate application to the required task. 2.2. All tools and/or equipment to be used are checked for condition or calibration, where necessary. 2.3. Unsafe or faulty tools or equipment are identified and marked for repair according to enterprise procedures.
3. Use tools and/or equipment	3.1. Tools and/or equipment are used according to standard practices to ensure the correct outcome is produced. 3.2. Tools and/or equipment use is carried out without damage to components or tooling in a safe and

ELEMENT	PERFORMANCE CRITERIA
	efficient manner. 3.3. Operational maintenance of tools or equipment is undertaken according to standard workshop procedures.
4. Store tools and/ or equipment	4.1. Tools and/or equipment are stored safely and securely in accordance with enterprise procedures.
5. Apply standard trade practices	5.1. Simple items are manufactured using basic engineering hand skills. 5.2. Common types of aircraft attachment hardware are correctly selected and used. 5.3. Common types of safety locking devices and fasteners are correctly selected and used. 5.4. Aircraft components, devices and hardware are lockwired in the correct manner, using the appropriate wire gauge. 5.5. Common types of aircraft connectors and plumbing are accurately assembled or connected.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- the correct identification, inspection of, application, use and storage of general and purpose specific hand tools (i.e. spanners, screwdrivers, pliers, hammers, cutting devices, files, punches, drills and marking out tools) that may be found in an aircraft engineering workshop or hangar.
- the correct identification, inspection of (including calibration), application, use and storage of precision measuring tools (i.e. micrometers, vernier instruments, feeler gauges, go/no-go gauges) that may be found in an aircraft engineering workshop or hangar. Reading instrument scales must be clearly demonstrated during application of instruments to ensure compliance with specifications
- the correct identification, inspection of, application, operation and storage/servicing of portable and fixed power and machine tools (i.e. drills, presses, grinders, shears, pan breaks) that may be found in an aircraft engineering workshop or hangar
- identification, inspection and use of lubrication equipment

REQUIRED SKILLS AND KNOWLEDGE

- determination of correct lubricants for specified applications
- identification of common ferrous and non-ferrous aircraft materials
- identification of common aircraft composite and non-metallic materials (other than wood)
- identification of aircraft hardware by markings, part numbers, size, shape and material
- the installation of aircraft hardware using standard practices/techniques to ensure safe security and includes:
 - minimum thread engagement
 - split pinning
 - lockwiring
 - application of locking compounds
 - locking tabs, spring washers
 - lock nuts
- the installation of aircraft hardware using tightening, torquing and tensioning techniques. Calculating setting, reading scales and setting up of torque wrench and/or tensioning devices must be clearly demonstrated before application of wrench or device
- identification of various types of aircraft rigid and flexible plumbing and their connectors
- identification of aircraft control cables and related cable system hardware.

Required knowledge

Look for evidence that confirms knowledge of:

- types of standard aircraft hardware and methods of identification, including bolts, nuts, washers, pins (cotter, tapered), and fasteners (rivets and camlocs)
- materials from which hardware is manufactured and its applications, including plain, corrosion resistant and temperature/heat resistant
- types of safety locking devices and their application
- common ferrous and non-ferrous aircraft materials, heat treatment and testing
- characteristics and properties of common composite and non-metallic materials other than wood
- types of aircraft cable, turnbuckles, end fittings, tensiometers, pulleys and cable system components, aircraft flexible control systems
- types and characteristics of lubricants
- types and uses of lubrication equipment
- fits and clearances
- hand and power tool storage and maintenance requirements
- tool calibration requirements
- OH&S requirements relation to the use of hand and power tools.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to use aviation maintenance hand and power tools to lay out and fabricate simple items, correctly assemble items and apply safety locking devices.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	This unit must be linked in its assessment and application to those units that apply to actual maintenance of aircraft. It is essential that all OH&S requirements are met and understood. Evidence of knowledge about how tools and equipment are selected, used and maintained is essential. The ability to manipulate tools and equipment correctly in the performance of tasks is necessary to demonstrate transferability of hand skills across a variety of applications. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the tasks listed in Groups 1 to 4 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or by use of simulated activities, using tools and equipment specified by aircraft manuals as well as general purpose tools and test equipment found in most routine situations. It is expected that the person operating these tools and equipment would be able to demonstrate a broad application of their skills.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Application of competency	The competency applies to the selection and use of hand and power tools and equipment associated with on-aircraft or workshop related activities in the aircraft maintenance environment that involve: 1. Laying out and fabricating simple items from common aircraft materials 2. Assembling items using a representative range of common types of aircraft attachment hardware for which relevant fits and clearances, appropriate safety locking devices and fasteners, including lockwire, are correctly selected and applied 3. Assembling/connecting a range of common aircraft connectors and plumbing, applying safety locking devices where applicable 4. Assembling/connecting aircraft control cables and applying safety locking devices where applicable
The use of tools and equipment	The use of tools and equipment includes the related manipulative skills required to perform maintenance.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT	

	enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA111B Perform administrative processes to prepare for certification of civil aircraft maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This is one of the units of competency that must be attained to progress from Aircraft Maintenance Engineer to the grant of an Aircraft Maintenance Engineer Licence or Aviation Maintenance Specialist Certificate under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Assessment Guidelines. It covers the competencies required to correctly interpret and apply CASA airworthiness and certification requirements during aircraft maintenance. The skills and knowledge covered by the units of competency at Certificate IV level listed in the Aeroskills Training Package for the qualification leading to the applicable Aircraft Maintenance Engineer Licence sought are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This Unit requires application of legislative and regulatory requirements relating to the certification of aviation maintenance. Applications include all maintenance tasks that require certification by a Licensed Aircraft Maintenance Engineer.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine the registration status of an aircraft.	1.1.Registration status is determined in accordance with CASR Part 47. 1.2.The person responsible for airworthiness and maintenance control is identified.
2. Determine eligibility to certify the completion of aircraft maintenance activities.	2.1.Eligibility to certify in terms of licence privileges is established in accordance with CASR Parts M, 145 and 66. 2.2.Eligibility to certify in terms of the Aircraft Maintenance Organisation Class/Rating is established in accordance with CASR Part 145.
3. Prepare for return of aircraft to service.	3.1.Completion of all scheduled and unscheduled maintenance activities is coordinated in accordance

ELEMENT	PERFORMANCE CRITERIA
	with CASR Parts M 145, 66 and the approved maintenance program. 3.2. The requirement for a maintenance test flight is determined. 3.3. Documentation is prepared for return of aircraft to service in accordance with CASR Part M and /or 145 and the approved maintenance program.
4. Compile and process maintenance documentation and reports.	4.1. Maintenance documentation is raised and compiled for certification. 4.2. Configuration management procedures are applied. 4.3. Maintenance related reports are compiled and processed. 4.4. Technical communication activities, both oral and written, are performed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Describing and applying the requirements applicable to the privileges of their authority
- Application of Airworthiness Directive requirements under CASR 39
- Application of Maintainers' Responsibilities under CASR Part M
- Compliance with CASA 45 Subpart D
- Application of Aviation Maintenance Personnel Licensing Requirements under CASR 66
- Application of requirements related to conduct and certification of maintenance under CASR 145
- Refuelling, taxiing, use of radios and engine running
- Demonstrating a familiarity with requirements related to the tasks and functions they may perform
- Demonstration of literacy and oral expression skills required for clear written and oral communication

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- Airworthiness Directive requirements under CASR 39
- Maintainers' Responsibilities under CASR Parts M, 66 and 145
- Aircraft Registration and Markings under CASR 45- 47
- Aviation Maintenance Personnel Licensing Requirements under CASR 66
- Maintenance Requirements under -the applicable CASR operational Parts.
- Maintenance Organisations Requirements under CASR 145
- Design Organisations under CASR 146
- Maintenance Training Organisations under CASR 147
- Requirements associated with refuelling, taxiing, use of radios and engine running

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply without error legislative and regulatory requirements relating to the certification of aviation maintenance.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that airworthiness compliance requirements are interpreted and fully applied without error.

Evidence is required of underlying knowledge and skills associated with the application of airworthiness legislation and compliance requirements, along with evidence of appropriate levels of literacy and oral expression associated with presenting clear and concise information.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision without intervention on a range of tasks fully representative of Groups 1 to 18 in the Range Statement. The body of evidence for this unit may be collected and logged during simulated activities at the CASR Part 147 MTO and/or performance during supervised workplace

EVIDENCE GUIDE	
	activities such as Practical Consolidation of Training (PCT) assessments. Knowledge must also be demonstrated of the concept of airworthiness that underpins the legislative framework and compliance requirements.
Context of and specific resources for assessment	Competency should be assessed in the work environment under supervision but without intervention for the purpose of Journal entries, and/or by use of simulated activities in a CASR Part 147 Maintenance Training Organisation (MTO), covering the interpretation and application of airworthiness control and certification requirements.
Method of assessment	This unit must be linked in its assessment and application to those that apply to the exercise of Aircraft Maintenance Engineer Licence or Aviation Maintenance Specialist privileges in the actual maintenance of aircraft.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Application	The competency applies to the certification of aircraft maintenance activities, including: 1. Scheduled maintenance 2. Unscheduled maintenance 3. Configuration changes

RANGE STATEMENT

4. Modification incorporation

5. Repairs.

In performing Tasks 1 to 5, knowledge is to be applied with regard to airworthiness regulatory systems and Australian legislation, and the application of compliance requirements in the performance, recording and certification of maintenance activities, as follows:

6. International and national regulatory bodies and recognition agreements, including bilateral agreements

7. Australian airworthiness regulatory bodies and the legislative framework

8. The basis of airworthiness certification and determination of non-conformity

9. Procedures for release of aircraft to service following maintenance, including the determination of the requirement for a maintenance test flight

10. Procedures for certification of scheduled and unscheduled maintenance activities

11. Procedures for certification of the incorporation of modifications

12. Procedures for certifying the completion of repairs

13. Determining and applying configuration management procedures, including the weighing of aircraft and the determination of the centre of gravity

14. Compiling and processing service difficulty reports

15. Compiling and processing technical investigation reports

16. Compiling and processing condition reports

17. Orally communicating on technical and airworthiness compliance topics

18. Communicating in writing on technical and airworthiness compliance issues.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA112B Plan and implement civil aircraft maintenance activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This is one of the units of competency that must be attained to progress from Aircraft Maintenance Engineer to the grant of an Aircraft Maintenance Engineer Licence or Aviation Maintenance Specialist Certificate under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines. It covers the competencies required to plan and implement aircraft maintenance activities. The skills and knowledge covered by the units of competency at Certificate IV level listed in the Aeroskills Training Package for the qualification leading to the applicable Aircraft Maintenance Engineer Licence sought are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of maintenance planning and management skills to plan, implement, evaluate and report on aviation maintenance activities while complying with all legislative and regulatory requirements. Applications include all aviation maintenance activities.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan aircraft maintenance activities.	1.1. Maintenance requirements are determined from applicable sources. 1.2. Maintenance tasks are analysed and prioritised. 1.3. Resource requirements are identified and allocated to ensure the timely and efficient completion of maintenance tasks. 1.4. Maintenance tasks to be performed are recorded in a maintenance schedule in accordance with enterprise policy and procedures.

ELEMENT	PERFORMANCE CRITERIA
2. Implement aircraft maintenance activities	2.1.Roles and responsibilities of maintenance personnel are communicated and agreed. 2.2.Resources and equipment required to perform maintenance tasks are identified and arranged. 2.3.Regular liaison with maintenance personnel is maintained to ensure scheduled/unscheduled tasks are being completed and continuity is maintained. 2.4.Management/stakeholders are provided with regular updates on maintenance progress as required. 2.5.Maintenance activities are monitored to ensure compliance with prescribed instructions, policy, procedures and/or regulatory requirements. 2.6.Advice and assistance with maintenance activities is provided as required. 2.7.Maintenance problems are resolved in accordance with the approved maintenance data. 2.8.Proposed changes to the maintenance schedule are processed and negotiated with management/stakeholders
3. Evaluate and report maintenance outcomes.	3.1.Final maintenance outcomes are evaluated against the schedule in accordance with enterprise policy and procedures. 3.2.Maintenance reports are collated, evaluated and forwarded to appropriate management personnel in accordance with enterprise policy and procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of the procedures for the identification of specific maintenance requirements through the review of:
- maintenance releases
- manufacturers' maintenance manuals and servicing schedules
- computer maintenance data systems

REQUIRED SKILLS AND KNOWLEDGE

- service bulletins
- modification incorporation instructions
- repair instructions
- feedback from maintenance personnel and aircrew via Technical Logs or approved maintenance documentation
- Aircraft Maintenance Organisation (AMO) internal work instructions or directives
- Airworthiness Directives (AD).
- Basic project planning techniques, including planning chart development, timing, prioritising, resourcing, monitoring, performance measurement and evaluation of maintenance tasks
- Financial and inventory management as an element of task planning
- The basic function, components, operation and inter-relationship of all aircraft systems for the initial rating sought
- Problem solving techniques and troubleshooting procedures
- Damage assessment philosophies and procedures, particularly with regard to corrosion damage
- Cost control during maintenance, including cost effectiveness considerations for different repair types
- Philosophies and considerations in repair versus replacement options
- The application of quality management systems in aircraft maintenance
- Enterprise and regulatory requirements for undertaking, recording and reporting maintenance activities, including relevant OH&S requirements and the use of PPE.

Required knowledge

Look for evidence that confirms knowledge of:

- Methods of determining and specifying maintenance requirements (MRB, MSG, EROPS, RVSM, Maintenance Programs, Minimum Equipment List, reliability, ATA codes).
- The procedures for the identification of specific maintenance requirements through the review of:
 - maintenance releases
 - manufacturers' maintenance manuals and servicing schedules
 - computer maintenance data systems
 - service bulletins
 - modification incorporation instructions
 - repair instructions
 - feedback from maintenance personnel and aircrew via Technical Logs or approved maintenance documentation
- Aircraft Maintenance Organisation (AMO) internal work instructions or directives
- Airworthiness Directives (AD).
- The regulations governing aircraft maintenance coordination

REQUIRED SKILLS AND KNOWLEDGE

- Basic project planning techniques, including planning chart development, timing, prioritising, resourcing, monitoring, performance measurement and evaluation of maintenance tasks
- Financial and inventory management as an element of task planning
- The basic function, components, operation and inter-relationship of all aircraft systems for the initial rating sought
- Problem solving techniques and troubleshooting procedures
- Damage assessment philosophies and procedures, particularly with regard to corrosion damage
- Cost control during maintenance, including cost effectiveness considerations for different repair types
- Philosophies and considerations in repair versus replacement options
- The application of quality management systems in aircraft maintenance
- Enterprise and regulatory requirements for undertaking, recording and reporting maintenance activities, including relevant OH&S requirements and the use of PPE.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to plan and implement aviation maintenance activities and evaluate and report on the outcome of the activities while complying with all relevant legislative and regulatory requirements.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that maintenance requirements are fully identified and that all applicable aspects of planning and implementation are identified and applied to meet organisational priorities and minimise workplace disruptions.

Evidence is required of underlying knowledge and skills in the planning and implementation of maintenance activities, and in the associated compliance with airworthiness regulatory requirements.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of

EVIDENCE GUIDE	
	competency are being achieved on a task representative of Groups 1 to 7 in the Range Statement. This shall be established via simulated activities at the CASR Part 147 MTO and performance during supervised workplace activities.
Context of and specific resources for assessment	Competency should be assessed under supervision without intervention in the work environment, and/or by use of simulated activities in a CASR Part 147 Maintenance Training Organisation (MTO), covering the full range of maintenance planning and implementation.
Method of assessment	This unit must be linked in its assessment and application to those that apply to the exercise of Aircraft Maintenance Engineer Licence or Aircraft Maintenance Specialist Certificate privileges in the actual maintenance of aircraft
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
<i>Maintenance requirements</i>	1. Maintenance requirements may be determined from any or all of: • maintenance releases • manufacturers' maintenance manuals and servicing schedules • computer maintenance data systems • service bulletins

RANGE STATEMENT	
	• modification incorporation instructions • repair instructions • feedback from maintenance personnel and aircrew via Technical Logs or approved maintenance documentation • Aircraft Maintenance Organisation (AMO) internal work instructions or directives • Airworthiness Directives (ADs).
<i>Resource requirements</i>	2. Resource requirements may include: • required numbers of personnel and their availability • personnel qualifications, experience and authorisations • the availability of the resources listed in Group 7.
<i>Resources and equipment required to perform maintenance tasks</i>	3. Resources and equipment required to perform maintenance tasks may include: • personnel • spares • lubricants • consumables • tools • special equipment • personal protective equipment (PPE) • associated equipment including various items of ground support equipment.
<i>Regular updates</i>	4. Regular updates may include: • Both written and verbal reports, including notes, work sheets, status reports, briefs and individual directives.
<i>Prescribed instructions, policy, procedures and/or regulatory requirements</i>	5. Prescribed instructions, policy, procedures and/or regulatory requirements may include: • manufacturers operating and maintenance manuals • CASA-approved enterprise operation manuals • quality procedures and work instructions • OH&S policies and instructions including Material Safety Data Sheets • management directives.

RANGE STATEMENT	
<i>Advice and assistance in maintenance activities</i>	6. Advice and assistance in maintenance activities may include: • fault diagnosis procedures • troubleshooting • damage assessment • assessment of repair cost effectiveness • assessment of replacement options • technical services advice or directives.
<i>Maintenance problems</i>	7. Maintenance problems may include: • lack of resources • unanticipated breakdowns or faults • changes in priorities.
Application	The competency applies to the planning and implementation of aircraft maintenance activities, including: • Scheduled maintenance • Unscheduled maintenance • Configuration changes • Modification incorporation • Repair.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA113C Supervise civil aircraft maintenance activities and manage human resources in the workplace

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This is one of the units of competency that must be attained to progress from AME to the grant of an Aircraft Maintenance Engineer Licence, Aviation Maintenance Specialist Certificate or an Aircraft Maintenance Technician Authorisation. It covers the competencies required to supervise maintenance activities, apply human resource management practices applicable at the supervisor level and contribute to workplace training and competency assessment. The skills and knowledge covered by the units of competency at Certificate IV level listed in the Aeroskills Training Package for the qualification leading to the applicable Aircraft Maintenance Engineer Licence sought are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This Unit requires application of supervisory and personnel management skills in the performance of maintenance activities Applications include all aviation maintenance activities.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan maintenance for teams	1.1. Maintenance tasks are identified and interpreted from available <i>maintenance data or schedules</i> in accordance with enterprise procedures. 1.2. Workload is organised in order of priority taking into consideration, where applicable, mandatory and optional maintenance tasks. Timeframes are taken into consideration when prioritising maintenance tasks. 1.3. <i>Required resources</i> are obtained to facilitate planned maintenance tasks.
2. Implement maintenance for teams	2.1. Maintenance tasks are allocated to appropriate team members with consideration of individual's experience and qualifications. 2.2. Personnel are clearly briefed on their responsibility

ELEMENT	PERFORMANCE CRITERIA
	and function in the team. 2.3. Team members are correctly authorised to operate the required items of ground support equipment. 2.4. Team members are instructed to observe occupational health and safety requirements and all safety hazards are promptly identified and addressed
3. Provide guidance	3.1. Guidance is provided to staff, appropriate to the maintenance task and individual's experience. This includes the communication of relevant maintenance data and procedures. Guidance is readily available, in person as appropriate to the maintenance task. 3.2. Guidance is provided in determining the cause of difficult faults or faults not covered in maintenance manual fault diagnosis guides.
4. Monitor maintenance quality	4.1. Activities are checked and personnel are guided to ensure that maintenance is performed in accordance with the applicable documentation, policies and procedures. 4.2. Completed work including stages of maintenance are inspected for serviceability and prepared for certification on applicable documentation.
5. Perform human resource management activities at the supervisor level	5.1. Human factors affecting job performance are identified and responded to. 5.2. The possibility of maintenance errors is minimised. 5.3. Sound teamwork is maintained through an awareness of contributing factors. 5.4. Sound employment relations are maintained.
6. Perform workplace training tasks	6.1. On-job training is delivered. 6.2. The Supervisor's Verification portion of the Workplace History Sheets (Section 3) of the Log of Industrial Experience and Achievement is completed. 6.3. Expert witness verification of competency for Maintenance Training Organisation (MTO) workplace assessors is provided when required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Planning and implementing team maintenance activities
- Application of all relevant OH&S procedures
- Observing human factors in team maintenance activities
- Providing guidance to team members
- Human resource management at team level.

Required knowledge

Look for evidence that confirms knowledge of:

- Applicable State and Commonwealth OH&S regulations, and of enterprise OH&S instructions.
- The correct use of applicable items of PPE
- The requirement for Confined Space Entry Permits and related training
- Applicable Material Safety Data Sheets
- ATA 113 Specification for Maintenance Human Factors Guidelines, and of the following human factor elements:
 - General factors, including:
 - weaknesses in task design and support
 - motivation and attitudes, task demands and limitations in performance
 - cooperative work, communication and leadership
 - allocation of resources, workload, work conditions, double standards
 - Aspects relating to the task, including:
 - physical and mental work
 - features of the task which limit efficiency or safety performance including constraints such as signing-off and shift changeover; time pressures, information sources, trouble shooting methods, tools and equipment
 - task performance levels: skill-based, rule-based and knowledge-based; and the limitations encountered in each category
 - complex and inter-related aircraft systems
 - Limitations of individual performance, including:
 - the sources and effects of fatigue, detection and countermeasures
 - vision and lighting
 - hearing and noise
 - memory, short and long term
 - claustrophobia and acrophobia

REQUIRED SKILLS AND KNOWLEDGE

- The influence of external factors, including:
 - maintainability of aircraft
 - guidance availability
 - social environment
 - physical environment, including the effects of extremes of heat and cold, and countermeasures (eg limited periods of exposure); noise and fumes; motion and vibration.
- The causes of variability in human performance, including:
 - effects of arousal
 - limitations of perception
 - limitations of memory, and management of these
 - limitations of decision-making
 - limitations of motor-functioning
 - information processing.
- Factors that degrade performance, including:
 - risk motivation
 - individual differences (eg depth of training and experience)
 - health
 - alcohol and drugs.
- Errors in maintenance tasks, including:
 - omissions, incorrect installation and wrong parts
 - assumptions
 - error management by minimisation, capture and tolerance
- Human factors within groups, including:
 - the distinction between groups and teams; coordination and synergy
 - types of groups: horizontal (same level of personnel) and vertical (different functions) composition
 - group characteristics; reducing overall task time; coordination
 - team characteristics; performance exceeds sum of individual performances
 - factors which lead to effective working in groups and teams: interaction, participation, open communication, clear expectations, shared leadership, self-assessment
 - team building
 - communication: the process, feedback
- Organisational aspects, including:
 - functions and dysfunctionality
 - double standards: professionalism, procedures, time pressure
 - organisational culture, professional culture and work-group culture; peer pressure.

REQUIRED SKILLS AND KNOWLEDGE

- Violation of regulations, procedures and processes, including:
 - organisational failure: latent failure, error-provoking conditions and unsafe acts
 - organisational learning
 - maintenance error management program.
- The National Aeroskills Training Package, including relevant competency units and training pathways.
- The Log of Industrial Experience and Achievement, including:
 - purpose of the Log
 - its structure and content
 - responsibility for making entries therein
 - responsibility for the certification of entries
- The role of CASR Part 147 MTOs in the training and competency assessment process, and of the role of supervisors in assisting workplace competency assessors.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to supervise maintenance activities, provide guidance/on-job training and manage human resources at team level while complying with all relevant legislative and regulatory requirements.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that maintenance requirements are fully identified and that all applicable aspects of supervision, supervisor level human resource management and involvement in workplace training and competency assessment are identified and applied.

Evidence is required of underlying knowledge and skills in the supervision of maintenance activities, and in the associated compliance with airworthiness regulatory requirements. The ability must be demonstrated to apply supervisor level human resource management processes during supervision activities, deliver workplace training,

EVIDENCE GUIDE	
	and to record experience and evidence for competency assessment associated with completion of the Log of Industrial Experience and Achievement. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision, without intervention on a maintenance supervision task that includes Groups 1 to 7 in the Range Statement. This shall be established via simulated activities at the CASR Part 147 MTO and performance during supervised workplace activities.
Context of and specific resources for assessment	Competency should be assessed under supervision, without intervention in the work environment, and/or by use of approved simulated activities in a CASR Part 147 MTO, covering the full range of maintenance supervision, supervisor level human resource management and assistance with workplace training and competency assessment, as provided for in the Range Statement.
Method of assessment	This unit must be linked in its assessment and application to those that apply to the exercise of Aircraft Maintenance Engineer Licence, Aircraft Maintenance Specialist Certificate or Aircraft Maintenance Technician privileges in the actual maintenance of aircraft.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to

RANGE STATEMENT	
	facilitate specification of the assessment requirements included in the Evidence Guide.
<i>Maintenance data or schedules</i>	1. Maintenance data or schedules may include: • maintenance records • manufacturers' maintenance manuals and servicing schedules • computer maintenance data systems • service bulletins • airworthiness directives • modification incorporation instructions • repair instructions • observations and feedback from maintenance personnel and aircrew via Technical Log entries • Approved Maintenance Organisation (AMO) internal work instructions or directives.
<i>Required resources</i>	2. Required resources may include: • Personnel • Spares • Lubricants • Consumables • Tools • Special equipment • Personal protective equipment (PPE) • Associated equipment including various items of ground support equipment • Considerations regarding resources may also include: • required numbers of personnel and their availability • personnel qualifications, experience and authorisations • availability of the listed resources
<i>Guidance in maintenance activities</i>	3. Guidance in maintenance activities may include: • Fault diagnosis procedures • Troubleshooting • Damage assessment • Assessment of repair cost effectiveness

RANGE STATEMENT	
	• Assessment of replacement options
<i>Human factors affecting job performance</i>	4. Human factors affecting job performance may include: • Individual health and disability • Social psychology • Time pressure and workload • The physical work environment
<i>The possibility of maintenance errors may be minimised</i>	5. The possibility of maintenance errors may be minimised through: • Varying the extent of supervision according to the nature of the task and work conditions • Allowance for qualification and experience levels within the team • Allowance for human error and "Murphy's Law" ('If something can go wrong, it will.')
<i>Employment relations at supervisor level</i>	6. Employment relations at supervisor level may include: • Resolution or referral to management of complaints and difficulties • Resolution of conflict within the team • Absence of team members from the job • Maintenance of discipline in the performance of maintenance tasks • Allowance for cultural diversity within the team • Knowledge of relevant sections of industrial awards, enterprise agreements, and conditions of employment and service that apply to the particular workplace
7. On-job training	7. On-job training involves: • The reinforcement of knowledge and skills gained in off-job training and guiding their application to specific on-job maintenance tasks.
Application	The competency applies to the supervision of aircraft maintenance activities, including: • Scheduled maintenance • Unscheduled maintenance • Configuration changes

RANGE STATEMENT	
	• Modification incorporation • Repair.
Prescribed instructions, policy, procedures and/or regulatory requirements	Prescribed instructions, policy, procedures and/or regulatory requirements governing maintenance activities may include: • Manufacturers operating and maintenance manuals • CASA-approved enterprise operation manuals • Quality procedures and work instructions • OH&S policies and instructions including Material Safety Data Sheets • Management directives.

Unit Sector(s)

Unit sector	Organisations operating under Civil Aviation Safety Regulations

Competency field

Competency field	Supervision of aviation maintenance

Co-requisite units

Co-requisite units		

MEA114A Certify aeronautical product maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency must be attained by individuals working in CASR Part 42 Sub-Part F and Part 145 maintenance organisations who are authorised to return items of aeronautical product to service after the completion of maintenance. It covers the competencies required to correctly interpret and apply CASA airworthiness and certification requirements during aircraft component maintenance. The units of competency that are specified by the maintenance organisation for the repair, overhaul or modification of the item of aeronautical product being certified for return to service are co-requisites to this unit.

Application of the Unit

Application of the unit	This Unit requires application of legislative and regulatory requirements relating to the certification of aviation maintenance. Applications include all aeronautical product maintenance tasks that require certification following completion of maintenance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Comply with airworthiness regulations	1.1. The status of aircraft components and component parts is determined. 1.2. Eligibility to certify the completion of maintenance activities is determined. 1.3. Item of aeronautical product is released to service. 1.4. Maintenance documentation required for certification is raised and compiled. 1.5. Configuration management procedures are applied. 1.6. Maintenance-related reports are compiled and processed. 1.7. Technical communication activities, both oral and written, are performed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Describing and applying the requirements applicable to the privileges of their authority
- Application of Airworthiness Directive requirements under CASR Part 39
- Application of Aviation Maintenance Personnel Licensing Requirements under CASR Part 66
- Application of requirements related to conduct and certification of maintenance under CASR Part 145 and CASR Part 42 Subpart F
- Demonstrating a familiarity with requirements related to the tasks and functions they may perform
- Demonstration of literacy and oral expression skills required for clear written and oral communication

Required knowledge

Look for evidence that confirms knowledge of:

- Airworthiness Directive requirements under CASR Part 39
- Maintainers' Responsibilities under CASR Parts 66, 145 and 42 Subpart F
- Aviation Maintenance Personnel Licensing Requirements under CASR Part 66
- Maintenance Organisations Requirements under CASR Part 145 and 42 Subpart F
- Design Organisations under CASR Part 21J
- Maintenance Training Organisations under CASR Part 147

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply without error legislative and regulatory requirements relating to the certification of aeronautical product maintenance.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that airworthiness compliance requirements are interpreted and fully applied without error. Evidence is required of underlying knowledge and skills associated with the application of airworthiness legislation and compliance requirements, along with evidence of appropriate levels of literacy and oral expression associated with presenting clear and concise information. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision without intervention on a range of tasks fully representative of Groups 1 to 18 in the Range Statement. The body of evidence for this unit may be collected and logged during simulated activities at the CASR Part 147 MTO and/or performance during supervised workplace activities. Knowledge must also be demonstrated of the concept of airworthiness that underpins the legislative framework and compliance requirements.
Context of and specific resources for assessment	Competency should be assessed in the work environment under supervision but without intervention for the purpose of Journal entries, and/or by use of simulated activities in a CASR Part 147 Maintenance Training Organisation (MTO), covering the interpretation and application of airworthiness control and certification requirements.
Method of assessment	This unit must be linked in its assessment and application to those that apply to the performance of maintenance on the applicable items of aeronautical product.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT

work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Application

The competency applies to the certification of aircraft maintenance activities, including:

1. Scheduled maintenance
2. Unscheduled maintenance
3. Configuration changes
4. Modification incorporation
5. Repairs.

In performing Tasks 1 to 5, knowledge is to be applied with regard to airworthiness regulatory systems and Australian legislation, and the application of compliance requirements in the performance, recording and certification of maintenance activities, as follows:

6. International and national regulatory bodies and recognition agreements, including bilateral agreements
7. Australian airworthiness regulatory bodies and the legislative framework
8. The basis of airworthiness certification and determination of non-conformity
9. Procedures for release of aeronautical product to service following maintenance
10. Procedures for certification of scheduled and unscheduled maintenance activities
11. Procedures for certification of the incorporation of modifications
12. Procedures for certifying the completion of repairs
13. Determining and applying configuration management procedures.

RANGE STATEMENT

	14. Compiling and processing service difficulty reports 15. Compiling and processing technical investigation reports 16. Compiling and processing condition reports 17. Orally communicating on technical and airworthiness compliance topics 18. Communicating in writing on technical and airworthiness compliance issues.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA115A Plan and implement aeronautical product maintenance activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to plan and implement aeronautical product workshop maintenance activities while complying with airworthiness regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the planning, implementation and evaluation of workshop maintenance activities relating to items of aeronautical product. Applications include the overhaul, repair and modification of items of aeronautical product.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan aeronautical product maintenance activities.	1.1. <i>Maintenance requirements</i> are determined from <i>applicable sources</i>. 1.2. Maintenance tasks are analysed and prioritised. 1.3. <i>Resource requirements</i> are identified and allocated to ensure the timely and efficient completion of maintenance tasks. 1.4. Maintenance tasks to be performed are recorded in accordance with <i>enterprise policy and procedures</i>.
2. Implement aeronautical product maintenance activities.	2.1. Roles and responsibilities of maintenance personnel are communicated and agreed. 2.2. Resources and equipment required to perform maintenance tasks are identified and arranged. 2.3. Regular liaison with maintenance personnel is maintained to ensure that tasks are being completed and continuity is maintained. 2.4. Management/stakeholders are provided with regular updates on maintenance progress. 2.5. Maintenance activities are monitored to ensure compliance with prescribed instructions, policy, procedures and/or <i>regulatory requirements</i>. 2.6. <i>Advice and assistance</i> with maintenance activities is provided as required. 2.7. <i>Maintenance problems</i> are resolved in accordance

ELEMENT	PERFORMANCE CRITERIA
	with the applicable maintenance documentation.
3. Evaluate and report maintenance outcomes.	3.1. Final maintenance outcomes are evaluated against the applicable maintenance documentation in accordance with enterprise policy and procedures. 3.2. Maintenance reports are collated, evaluated and forwarded to appropriate management personnel in accordance with regulatory requirements, enterprise policy and procedures. 3.3. Required maintenance release documentation is packaged with items of aeronautical product that are being released to service.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication
- written communication
- planning
- problem solving
- management of personnel and resources
- application of regulations, policies and procedures including OH&S

Required knowledge

Look for evidence that confirms knowledge of:

- basic project planning techniques
- problem solving techniques
- basic function and theory of operation of applicable items of aeronautical product
- troubleshooting procedures, including test station operation
- cost effectiveness considerations for different repair types
- philosophies and considerations in repair vs replacement options
- enterprise and regulatory requirements for undertaking, recording and reporting maintenance activities
- OH&S legislation

REQUIRED SKILLS AND KNOWLEDGE

- equity, fraud and ethics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to plan aeronautical product maintenance, manage a workshop performing the maintenance and evaluate and report appropriately the maintenance outcomes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations.

The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Maintenance requirements	<i>Maintenance requirements may include:</i> - overhaul - repair - configuration changes - modification incorporation - defect investigation
Applicable data sources	<i>Applicable sources may include:</i> - component unserviceability details - manufacturers' maintenance manuals - computer maintenance data systems - service bulletins - modification incorporation instructions - repair instructions - management directives
Resource requirements	<i>Resource requirements may include:</i> - required numbers of personnel and their availability - personnel qualifications, experience and

RANGE STATEMENT	
	authorisations • spares • consumables • special equipment including component test stations • ground support equipment • personal protective equipment (PPE) • technical data
Enterprise policy and procedures	<i>Enterprise policy and procedures may be specified in:</i> • maintenance organisation manual • organisational policy manuals • procedures manuals • quality manuals • safety manuals • defence instructions and standards • standing instructions
Regular updates	<i>Regular updates may be:</i> • written or verbal including notes, work sheets, status reports, briefs and individual directives
Regulatory requirements	<i>Regulatory requirements may be found in:</i> • Civil Aviation Regulations or Civil Aviation Safety Regulations • AAP 7001.053 Technical Airworthiness Maintenance Manual
Advice and assistance	<i>Advice and assistance may include:</i> • fault diagnosis procedures • troubleshooting • damage assessment • assessment of repair cost effectiveness • assessment of replacement options
Maintenance problems	<i>Maintenance problems may include:</i> • lack of resources • unanticipated breakdowns or faults • changes in priorities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA116B Apply occupational health and safety procedures at supervisor level in aviation maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all training pathways at Diploma level, and at Certificate IV level where the training pathway leads to the responsibility for maintenance supervision. It covers the competencies required to implement and monitor the organisation's health and safety policies, procedures and programs in aviation maintenance work areas to achieve and maintain occupational health and safety (OHS) standards. The unit is based on the National Guidelines for integrating OHS competencies into national industry competency standards (NOHSC: 7025, 1998) and applies to the supervision of all aviation maintenance activities.

Application of the Unit

Application of the unit	This unit requires application of OHS Acts, regulations, codes of practice and enterprise OHS procedures during the supervision of all aviation maintenance activities. Applications include supervision of aviation maintenance activities performed on aircraft and in workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Provide information to the work group about occupational health and safety and the organisation's occupational health and safety policies, procedures and programs.	1.1. Relevant provisions of <i>occupational health and safety legislation and codes of practice</i> are accurately and clearly explained to the work group. 1.2. <i>Information on the organisation's occupational health and safety policies, procedures and programs</i> is provided in a readily accessible manner and is accurately and clearly explained to the work group. 1.3. Information about identified hazards and the outcomes of risk assessment and risk control procedures is regularly provided and is accurately and clearly explained to the work group.
2. Implement and monitor participative arrangements for the management of occupational health and safety.	2.1. Organisational procedures for <i>consultation over occupational health and safety issues</i> are implemented and monitored to ensure that all members of the work group have the opportunity to contribute. 2.2. Issues raised through consultation are dealt with and

ELEMENT	PERFORMANCE CRITERIA
	resolved promptly or referred to the appropriate personnel for resolution in accordance with workplace procedures for issue resolution. 2.3. The outcomes of consultation over occupational health and safety issues are promptly made known to the work group.
3. Implement and monitor the organisation's procedures for identifying hazards and assessing risks.	3.1. Existing and potential hazards in the work areas are identified and reported so that risk assessment and risk control procedures can be applied.
4. Implement and monitor the organisation's procedures for dealing with hazardous events.	4.1. Work procedures to control risks are implemented and adherence to them by the work group is monitored in accordance with workplace procedures. 4.2. Existing risk control measures are monitored and results reported regularly in accordance with workplace procedures. 4.3. Inadequacies in existing risk control measures are identified in accordance with the hierarchy of control and reported to designated personnel. 4.4. Inadequacies in resource allocation for implementation of risk control measures are identified and reported to designated personnel.
5. Implement the organisation's procedures for dealing with hazardous events.	5.1. Workplace procedures for dealing with hazardous events are implemented whenever necessary to ensure that prompt control action is taken. 5.2. Hazardous events are investigated to identify their cause in accordance with investigation procedures. 5.3. Control measures to prevent recurrence and minimise risks of hazardous events are implemented based on the hierarchy of control if within scope of responsibilities and competencies or alternatively referred to designated personnel for implementation.
6. Implement and monitor the organisation's procedures for providing occupational health and safety training.	6.1. Occupational health and safety training needs are identified accurately, specifying gaps between occupational health and safety competencies required and those held by work group members. 6.2. Arrangements are made for fulfilling identified occupational health and safety training needs in both on and off-the-job training programs in consultation with relevant parties.

ELEMENT	PERFORMANCE CRITERIA
7. Implement and monitor the organisation's procedures for maintaining occupational health and safety records.	7.1. Occupational health and safety records for work area are accurately and legibly completed in accordance with workplace requirements for occupational health and safety records and legal requirements for the maintenance of records of occupational injury and disease. 7.2. Aggregate information from the area's occupational health and safety records is used to identify hazards and monitor risk control procedures within work area according to organisational procedures and within scope of responsibilities and competencies.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- analysing the entire work environment in the area of responsibility in order to identify hazards, assess risks and judge when intervention to control risks is necessary
- analysing relevant workplace data, such as incident or environmental monitoring data, to identify hazards, assess risks and evaluate the effectiveness of risk control measures
- assessing the resources needed to apply different risk control measures and make recommendations to management on that basis

Required knowledge

Look for evidence that confirms knowledge of:

- the provisions of OHS Acts, regulations and codes of practice relevant to the workplace, including legal responsibilities of employers, employees and other parties with legal responsibilities
- principles and practices of effective OHS management
- hazard identification and control in the workplace
- organisational OHS management systems, policies and procedures that support organisational compliance with legal requirements
- the impact on OHS management of workforce characteristics and composition
- the relevance of OHS management to other organisational systems, policies and

REQUIRED SKILLS AND KNOWLEDGE

procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply OHS Acts, regulations, codes of practice and enterprise OHS procedures during the supervision of aviation maintenance activities.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The demonstrated ability to apply the elements and performance criteria of this Unit in conjunction with other Units relating to the supervision of aviation maintenance activities is critical.

Assessors must be satisfied that evidence has been provided of:

- knowledge, consistent with the elements of competence, of all applicable OH&S Acts, regulations and codes of practice
- understanding of, and ability to apply, risk management procedures by undertaking hazard identification, risk assessment and risk control in accordance with the hierarchy of control
- knowledge of how characteristics of the workforce impact on the management of OH&S, and an ability to apply that understanding in the supervision of aviation maintenance activities

Context of and specific resources for assessment

This unit may be assessed through a combination of workplace (or a realistic simulation) and off-the-job assessment. The context of assessment should ensure that evidence relating to the contingency management component of competency can be collected. Evidence must include observation in the workplace as well as off-the job techniques such as interviews and simulations. Conditions for simulations should accurately simulate the range of circumstances (especially with regard to a realistic range of emergencies and hazardous

EVIDENCE GUIDE	
	events) that the individual could be expected to deal with in the workplace and allow for discussion. The individual must be given access to: • relevant OHS Acts, regulations and codes of practice • enterprise OHS policies and procedures • personal protective equipment • relevant work areas for identification of hazards and control measures The assessor should have recognised expertise in managing OHS in an aviation maintenance environment or work in an assessment team with such a person.
Method of assessment	To ensure that the contingency management component (ability to deal with irregularities and breakdowns) of competency is adequately assessed, evidence needs to be gathered across a range of work procedures and in a range of workplace circumstances. This could be either in an actual workplace or in a simulation of realistic workplace conditions. Techniques for assessment could include: • observation • simulation • case studies • interviews • written tests • workplace projects
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Application	The competency applies to supervisors working within both the Civil Aviation Safety Authority and the Australian Defence Force regulatory systems. This Unit is to be applied in combination with all other units in the Diploma of Aeroskills and the Diploma of Aviation Maintenance Management that relate to the supervision of aviation maintenance activities. It also applies to Certificate IV training pathways that lead to supervisory employment.
OHS legislation and codes of practice	<i>OHS legislation and codes of practice may include:</i> • State/Territory/Commonwealth OHS Acts, regulations and codes of practice, including general duty of care under OHS legislation and common law • relevant defence instructions • civil aviation safety regulations • requirements for the maintenance and confidentiality of records of occupational injury and disease • provisions relating to health and safety representatives and/or OHS committees • provisions relating to OHS issue resolution
The organisation's OHS policies, procedures and programs	<i>The organisation's OHS policies, procedures and programs may be included in:</i> • safety manuals • maintenance organisation manual • standing instructions • procedures manuals • work instructions
Information	<i>Information may include information:</i> • for the induction of new maintenance personnel • about the nature of work, tasks and procedures • to assist in work tasks • as part of providing direct supervision • to communicate organisational safety requirements and procedures • for consultation with health and safety representatives and OHS committees

RANGE STATEMENT	
Consultation over OHS issues	<i>Consultation over OHS issues may include participative arrangements for:</i> • formal and informal meetings which include OHS • OHS committees • other committees such as consultative, planning and purchasing • health and safety representatives • suggestions, requests, reports and concerns put forward by employees to management
Existing and potential hazards and risk	<i>Existing and potential hazards may be identified and risk assessed through activities such as:</i> • audits • workplace inspections • housekeeping • checking work area and/or equipment before and during work • job and work system assessment • reviews of OH&S records, including registers of hazardous substances, dangerous goods, etc • maintenance of plant and equipment • provision of supplies and equipment, e.g. review of Material Safety Data Sheets (MSDS) and manufacturer/supplier information • Identifying employee concerns
Risk control procedures	<i>Risk control procedures may include actions such as:</i> • measures to remove the cause of a risk at its source • application of the hierarchy of control: • elimination of risk • engineering controls • administrative controls • personal protective equipment • consultation with maintenance personnel and their representatives
Procedures for dealing with hazardous events	<i>Procedures for dealing with hazardous events may include:</i> • evacuation

RANGE STATEMENT	
	• chemical containment • first aid • accident/incident reporting and investigation
Hazardous events	<i>Hazardous events may include:</i> • accidents • fires and explosions • emergencies, e.g. fuel or chemical spills • bomb scares • violent incidents
OHS training	<i>OHS training may include:</i> • induction training • specific hazard training • specific task or equipment training • emergency and evacuation training • training as part of broader programs such as equipment operation
OHS records	<i>OHS records may include:</i> • OH&S audit and inspection reports • health surveillance and workplace environmental monitoring reports • records of instruction and training • manufacturers and suppliers information, including MSDS and dangerous goods storage lists • hazardous substances registers • maintenance and testing reports • workers compensation and rehabilitation records • first aid/medical post records

Unit Sector(s)

Unit sector	

Competency field

Competency field	Supervision of aviation maintenance

Co-requisite units

Co-requisite units		

MEA117A Apply self in the aviation maintenance environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all Certificate II training pathways. It covers the competencies required to work ethically and effectively in the maintenance of aircraft and aircraft components at Certificate II level while contributing to the development of the individual's own capabilities.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to ethical behaviour, effective work performance and skills development relating to aviation maintenance. Applications include all aspects of aircraft and aircraft component maintenance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage self	1.1. Accept responsibility for own workload. 1.2. Work individually or as a team member to complete maintenance tasks in a timely manner and in accordance with enterprise procedures and requirements. 1.3. Initiative is exercised in liaison with colleagues in identifying and analysing alternative approaches to resolving workplace issues and problems. 1.4. Performance feedback from others is used to improve work performance. 1.5. Organisational structure, career paths and eligibility criteria are identified. 1.6. Awareness is maintained of the effects of fatigue, drugs and alcohol on performance.
2. Work effectively with others	2.1. Communicate effectively with others. 2.2. Be ethical in dealing with others and apply principles of diversity. 2.3. The trust and confidence of others is developed and maintained at all levels of the organisation.
3. Participate in the process of change and innovation	3.1. Work with others to implement change in the workplace. 3.2. Opportunities for product and service enhancement are identified and proposed to supervisors.

ELEMENT	PERFORMANCE CRITERIA
4. Contribute to development of own skills	4.1. Competency standards relevant to current employment are identified and applied. 4.2. Competency standards required for desired career path progression are identified and action is initiated through enterprise procedures to facilitate their attainment. 4.3. Be open to new ideas and techniques and be prepared to invest time and effort in learning new skills. 4.4. Performance feedback is used to identify and develop ways to improve competence.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication
- written communication
- applying principles of equity and diversity
- managing own work performance
- interfacing effectively with others
- applying legislation, regulations and organisational policies and procedures relevant to role and workplace
- contributing to own knowledge, skills and competency development

Required knowledge

Look for evidence that confirms knowledge of:

- human factors
- the application within the workplace of legislative requirements and principles regarding equal opportunity, equity and diversity
- Aeroskills Training Package and relevant pathways to qualifications and their application within the enterprise
- problem solving principles
- constant improvement principles and procedures
- enterprise procedures for proposing modifications or changes in work procedures

REQUIRED SKILLS AND KNOWLEDGE

- change management

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to effectively manage their own workload and contribute to the ongoing development of their skills, knowledge and competencies in the applicable field of aviation maintenance.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Competency in this unit underpins competency in other aspects of the workplace role of employees at Certificate II level. It may be appropriate to assess parts of this unit in conjunction with units relating to the performance of maintenance activities.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job an appropriate simulation must be used where the range of conditions reflects realistic workplace situations.

The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes,

EVIDENCE GUIDE	
	standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Communication	<i>Communication may be by way of:</i> - oral communication - written communication including email

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA118A Conduct self in the aviation maintenance environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all Certificate III and IV level training pathways. It covers the competencies required to perform work ethically and efficiently in the maintenance of aircraft and aircraft components at Certificate IV level while contributing to the development of the individual's own capabilities.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to ethical behaviour, self-management and skills development relating to aviation maintenance. Applications include all aspects of aircraft and aircraft component maintenance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage self	1.1. Assess, prioritise and accept responsibility for own workload. 1.2. Work individually or as a team member to complete maintenance tasks in a timely manner and in accordance with enterprise procedures and requirements. 1.3. Independence and initiative are demonstrated in identifying and solving problems. 1.4. Initiative is exercised in liaison with colleagues in identifying and analysing alternative approaches to resolving workplace issues and problems. 1.5. Own skills and knowledge is evaluated and monitored and confidence is built in own capability, ideas and vision. 1.6. Performance feedback from others is used to improve work performance. 1.7. Organisational structure, career paths and eligibility criteria are identified. 1.8. Awareness is maintained of the effects of fatigue, drugs and alcohol on performance.
2. Work effectively with others	2.1. <i>Communicate</i> effectively with others. 2.2. Be ethical in dealing with others and apply principles of diversity.

ELEMENT	PERFORMANCE CRITERIA
	2.3. The trust and confidence of others is developed and maintained at all levels of the organisation. 2.4. Guidance is provided to other team members as required regarding skills application and maintenance processes. 2.5. Advantages, disadvantages and consequences of ideas are identified and considered.
3. Participate in the process of change and innovation	3.1. Work with others to implement change in the workplace. 3.2. Opportunities for product and service enhancement and options for achieving the desired result are identified and proposed in accordance with enterprise procedures.
4. Contribute to development of own skills	4.1. Competency standards relevant to current employment are identified and applied. 4.2. Competency standards required for desired career path progression are identified and action is initiated through enterprise procedures to facilitate their attainment. 4.3. Problem solving skills are reviewed for further development. 4.4. Own personal knowledge and skills is assessed and learning opportunities are accessed as required to fill gaps and enhance skills. 4.5. Be open to new ideas and techniques and be prepared to invest time and effort in learning new skills. 4.6. Performance feedback is used to identify and develop ways to improve competence.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication

REQUIRED SKILLS AND KNOWLEDGE

- written communication
- applying principles of equity and diversity
- managing own work performance
- interfacing effectively with others
- applying legislation, regulations and organisational policies and procedures relevant to role and workplace
- contributing to own knowledge, skills and competency development

Required knowledge

Look for evidence that confirms knowledge of:

- human factors
- the application within the workplace of legislative requirements and principles regarding equal opportunity, equity and diversity
- Aeroskills Training Package and relevant pathways to qualifications and their application within the enterprise
- problem solving principles
- constant improvement principles and procedures
- enterprise procedures for proposing modifications or changes in work procedures
- change management

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to demonstrate initiative, effectively manage their own workload and contribute to the ongoing development of their skills, knowledge and competencies in the applicable field of aviation maintenance.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be

EVIDENCE GUIDE	
	gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Competency in this unit underpins competency in other aspects of the workplace role of employees at Certificate III or IV levels. It may be appropriate to assess parts of this unit in conjunction with units relating to aircraft or component maintenance activities.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities

RANGE STATEMENT**Communication***Communication may be by way of:*

- oral communication
- written communication including email

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA119B Perform administrative processes to prepare for certification of civil aircraft A level line maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This is one of the units of competency that must be attained to progress from Aircraft Maintenance Engineer to the grant of an Aircraft Maintenance Engineer A Licence under Civil Aviation Safety Regulation (CASR) Part 66. It covers the competencies required to correctly interpret and apply CASA airworthiness and certification requirements during aircraft line maintenance tasks within the scope of the A Licence privileges. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for MEA20507 Certificate II in Aircraft Line Maintenance are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics as listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This Unit requires application of legislative and regulatory requirements relating to the certification of aviation maintenance within the scope of the A Licence. Applications include all maintenance tasks that require certification by an Aircraft Maintenance Engineer who holds an A Licence.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine eligibility to certify the completion of aircraft maintenance activities.	1.1. Eligibility to certify line maintenance activities in terms of licence privileges is established in accordance with CASR Parts M, 145 and 66.
2. Prepare for return of aircraft to service.	2.1. Allocated line maintenance activities are completed in accordance with CASR Parts M 145, 66 and the approved maintenance program. 2.2. Documentation is prepared for return of aircraft to service in accordance with CASR Part M and /or 145 and the approved maintenance program.
3. Compile and process maintenance documentation and	3.1. Maintenance documentation is raised and compiled for certification. 3.2. Configuration management procedures are applied.

ELEMENT	PERFORMANCE CRITERIA
reports.	3.3. Maintenance related reports are compiled and processed. 3.4. Technical communication activities, both oral and written, are performed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- describing and applying the requirements applicable to the privileges of their authority
- application of Airworthiness Directive requirements under CASR 39
- application of Maintainers' Responsibilities under CASR Part M
- compliance with CASA 45 Subpart D
- application of Aviation Maintenance Personnel Licensing Requirements under CASR 66
- application of requirements related to conduct and certification of maintenance under CASR 145
- demonstrating a familiarity with requirements related to the tasks and functions they may perform.
- demonstration of literacy and oral expression skills required for clear written and oral communication

Required knowledge

Look for evidence that confirms knowledge of:

- airworthiness directive requirements under CASR 39
- maintainers' responsibilities under CASR Parts M, 66 and 145
- aviation maintenance personnel licensing requirements under CASR 66
- maintenance requirements under the applicable CASR operational Parts.
- maintenance organisations requirements under CASR 145

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply without error legislative and regulatory requirements relating to the certification of aviation line maintenance activities that are within the scope of the A Licence privileges.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that airworthiness compliance requirements are interpreted and fully applied without error.

Evidence is required of underlying knowledge and skills associated with the application of airworthiness legislation and compliance requirements, along with evidence of appropriate levels of literacy and oral expression associated with presenting clear and concise information.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision without intervention on a range of tasks fully representative of Groups 1 to 13 in the Range Statement. The body of evidence for this unit may be collected and logged during simulated activities at the CASR Part 147 MTO and/or performance during supervised workplace activities.

Knowledge must also be demonstrated of the concept of airworthiness that underpins the legislative framework and compliance requirements.

Context of and specific resources for assessment

Competency should be assessed in the work environment under supervision but without intervention for the purpose of Journal entries, and/or by use of simulated activities in a CASR Part 147 Maintenance Training Organisation (MTO), covering the interpretation and application of airworthiness control and certification requirements.

This unit must be linked in its assessment and application to those that apply to the exercise of Aircraft Maintenance Engineer A Licence privileges in the actual

EVIDENCE GUIDE	
	maintenance of aircraft.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note:	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Certification of aircraft maintenance activities	The competency applies to the certification of aircraft maintenance activities, including: 1. Scheduled line maintenance up to Weekly Check level or equivalent 2. Unscheduled maintenance involving component removal and installation within the scope of the A Licence 3. Configuration changes that are within the scope of the A Licence 4. Repairs to internal fittings
Regulatory systems, legislation and compliance	In performing Tasks 1 to 4, knowledge is to be applied with regard to airworthiness regulatory systems and Australian legislation, and the application of compliance requirements in the performance, recording and certification of maintenance activities, as follows: 5. International and national regulatory bodies and recognition agreements, including bilateral

RANGE STATEMENT

	agreements 6. Australian airworthiness regulatory bodies and the legislative framework 7. Procedures for release of aircraft to service following maintenance 8. Procedures for certification of scheduled and unscheduled maintenance activities 9. Procedures for certifying the completion of repairs 10. Determining and applying configuration management procedures involving items of removable equipment 11. Compiling and processing service difficulty reports 12. Orally communicating on technical and airworthiness compliance topics 13. Communicating in writing on technical and airworthiness compliance issues

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA120B Manage an aviation maintenance quality system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the management of an aviation maintenance quality system in compliance with regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of quality system concepts and management procedures within an aerospace maintenance organisation. Applications include setting up a quality process and the monitoring and evaluation of quality processes within a quality system.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish a quality process	1.1.Organisational structure, work processes and outcomes are identified and defined 1.2.Operating procedures, job descriptions and <i>supporting documentation</i> are developed 1.3.Quality control processes/checks are established and documented 1.4.<i>Aviation regulatory instructions/policies</i> are identified and incorporated into quality system processes and documentation 1.5.Personnel roles and responsibilities are allocated and communicated
2. Monitor and evaluate quality processes within a quality system	2.1.Quality control checks are conducted in accordance with <i>organisational policy and procedures</i> 2.2.Non-compliances are identified, analysed and appropriate responses initiated in accordance with air safety management guidelines 2.3.Outcomes are recorded and reported in accordance with organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- leadership
- research and interpretation of regulations and guidelines
- written communication
- oral communication
- inspecting and auditing
- quality management

Required knowledge

Look for evidence that confirms knowledge of:

- enterprise authorisation and re-authorisation procedures
- organisational policy and procedures
- enterprise and industry regulatory requirements in monitoring and assessing quality in the aviation maintenance environment
- quality system audit and review requirements and processes
- relevant occupational health and safety (OHS) legislation at state/territory and Commonwealth level
- quality management principles

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply quality system principles and applicable regulatory requirements in setting up a quality system process and monitoring the operation of the process within a quality system.

Critical aspects for assessment and evidence required to demonstrate

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the

EVIDENCE GUIDE	
competency in this unit	unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities

RANGE STATEMENT	
Supporting documentation	<i>Supporting documentation may include:</i> • maintenance personnel authorisation workbooks • duty statements • standing instructions
Aviation regulatory instructions/policies	<i>Aviation regulatory instructions/policies may include:</i> • Civil Aviation Regulations (CARs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • AAP 7001.053 Technical Airworthiness Maintenance Manual • relevant overseas regulations such as Federal Aviation Regulations or European Aviation Safety Regulations • OHS legislation (state/territory and Commonwealth)
Organisational policy and procedures	<i>Organisational policy and procedures may include:</i> • maintenance organisation manual • maintenance organisation exposition • procedures manuals • work instructions • quality manuals • safety manuals • defence instructions • Australian Air publications • Civil Aviation advisory publications and advisory circulars • specific aircraft/equipment maintenance manuals • inspection schedules and worksheets

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA121B Manage aircraft/aeronautical product configuration

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Diploma and Advanced Diploma training pathways. It covers the management of aircraft and aeronautical product configuration in accordance with regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of configuration management procedures specified by applicable regulatory bodies and the organisation. Applications include management of weight and balance, role equipment, modification state and of spares authenticity and traceability.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage aircraft/aeronautical product configuration	1.1. Aircraft and aeronautical product <i>maintenance configuration</i> is maintained in accordance with <i>applicable maintenance documentation</i> 1.2. <i>Aircraft configuration</i> is changed and maintained to meet established role requirements in accordance with <i>airworthiness regulations and organisational policy and procedures</i> 1.3. Modifications to aircraft and aeronautical product are carried out in accordance with airworthiness regulations and organisational policy and procedures 1.4. Aeronautical product is <i>authenticated</i> and checked for serviceability in accordance with airworthiness regulations and organisational policy and procedures 1.5. Locally manufactured components are produced to authorised specifications and technical drawings 1.6. Aircraft weight and balance is maintained and validated in accordance with regulatory requirements and organisational policy and procedures 1.7. Revised weight and balance data is provided for revision of aircraft loading systems
2. Manage maintenance	2.1. <i>Maintenance reports and documentation</i> are

ELEMENT	PERFORMANCE CRITERIA
records and documentation	compiled and despatched in accordance with regulatory requirements and organisational policy and procedures 2.2. <i>Maintenance records and associated documentation</i> are maintained in accordance with organisational policy and procedures 2.3. Deficiencies in documentation are remedied in accordance with organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- management
- auditing
- documentation of maintenance activities

Required knowledge

Look for evidence that confirms knowledge of:

- modification documentation and recording
- weight and balance documentation and recording
- role/alternate mission changes and related maintenance actions
- deviations
- local manufacture of components
- procedures for determining authenticity of components
- cannibalisation procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the

EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to manage aircraft configuration and aircraft/aeronautical product technical configuration in accordance with relevant regulations and organisational policy and procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Maintenance configuration	The maintenance configuration is defined by the original drawings, standards and component fit of the aircraft or aeronautical product, and as subsequently varied by approved modifications or approved component/material substitution
Applicable maintenance documentation	<i>Applicable maintenance documentation may include:</i> • aircraft/equipment maintenance documentation required by applicable regulations and organisational policy and procedures • computer maintenance databases
Aircraft configuration	Aircraft configuration covers the equipment fit for approved operation, including specified role equipment
Airworthiness regulations and organisational policy and procedures	<i>Airworthiness regulations and organisational policy and procedures may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • AAP 7001.053 Technical Airworthiness Maintenance Manual • maintenance organisation manual • maintenance organisation exposition • continuing airworthiness management organisation exposition • maintenance control manual • procedures manual

RANGE STATEMENT	
	• work instructions
Evidence of component authenticity	<i>Evidence of component authenticity may include:</i> • authorised ADF technical documentation • original equipment manufacturer's documentation • authorised release certificate • certificate of conformance • a certifying statement
Maintenance reports and documentation	<i>Maintenance reports and documentation may include:</i> • reports and documents that must be forwarded to the Civil Aviation Safety Authority (CASA) as specified by CARs or CASRs • continuing airworthiness documentation and reports • computer maintenance database reports • stores forms • articles in use accounts • aircraft/equipment cross-reference records
Maintenance records and associated documentation	<i>Maintenance records and associated documentation may include:</i> • aircraft maintenance record • aeronautical product maintenance record • completed worksheets

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA122B Manage aircraft/equipment system performance testing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to evaluate and advise on airworthiness as a consequence of aircraft/equipment system performance testing and in compliance with relevant airworthiness regulations.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the use of performance testing in establishing the airworthiness state of aircraft and aircraft systems. Applications include aircraft flight testing, engine ground runs, system functional tests and test equipment calibration.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA126B	Manage aircraft maintenance activities

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and specify aircraft/equipment systems performance tests	1.1. <i>Aircraft/equipment system performance test</i> requirements are established in accordance with <i>airworthiness regulations, policy and procedures</i> 1.2. Aircraft/systems performance tests are programmed in conjunction with <i>appropriate personnel</i> 1.3. Aircraft/systems performance test specifications are communicated to appropriate personnel in accordance with organisational policy and procedures 1.4. Test equipment calibration is managed in accordance with regulatory requirements and organisational policy and procedures
2. Assess aircraft/equipment systems performance	2.1. Test results are assessed for compliance with test specifications 2.2. Non-compliant test results are identified and diagnosed in consultation with appropriate personnel 2.3. Aircraft/equipment systems are assessed for airworthiness compliance 2.4. Rectification <i>recommendations</i> are produced and reported in accordance with airworthiness policy and procedures 2.5. Test results are documented in accordance with approved guidelines

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • communicating and consulting • problem solving • researching • report writing • observing relevant regulatory requirements • applying occupation health and safety (OHS) requirements associated with engine ground runs and system functional testing
Required knowledge
Look for evidence that confirms knowledge of: • procedures and documentation action for test flights • procedures and documentation action for engine ground runs • procedures for functional testing of systems and evaluation of results • OHS procedures relating to engine ground runs and system functional testing

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to determine the requirement for performance tests, complete the authorisation process and participate in the assessment of results and determining any remedial action. Competency in this unit cannot be claimed until all prerequisites have been satisfied.
Critical aspects for assessment and evidence required to demonstrate	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the

EVIDENCE GUIDE	
competency in this unit	unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities

RANGE STATEMENT	
Aircraft/equipment system performance tests	<i>Aircraft/equipment system performance tests may include:</i> • engine ground runs • maintenance/validation test flights • system functional testing
Airworthiness regulations, policy and procedures	<i>Airworthiness regulations, policy and procedures may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • AAP 7001.053 Technical Airworthiness Maintenance Manual • airworthiness directives • maintenance management plan • maintenance organisation expositions • continuing airworthiness management organisation expositions • procedures manual • work instructions • flight test schedule • maintenance manuals
Appropriate personnel	<i>Appropriate personnel may include:</i> • maintenance test pilots • authorised engineering officers • authorised airworthiness representatives • accountable managers/responsible managers • senior maintenance managers • continuing airworthiness management personnel • authorised maintenance personnel
Recommendations	Recommendations may include: • completed test schedules • auditable reports

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA123B Manage aviation maintenance work environment policy and practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers planning and implementing work practices and work environment policy and practices in an aviation maintenance environment in accordance with regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of knowledge of relevant regulations and organisational policy and procedures in planning, developing and implementing work practices. Applications include aviation maintenance workshops, aircraft hangars and flight lines.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work practices and policies	1.1. Work practices and policies are planned which emphasise the safety and wellbeing of others and comply with legislation, rules and regulations 1.2. Guidance from appropriate authorities is sought where necessary 1.3. Plans are prepared for the implementation of corrective action to remedy identified deficiencies 1.4. Learning programs are planned to provide personnel with the knowledge and skills required to maintain a safe working environment
2. Control the development and implementation of work practices	2.1. Work practices are developed and implemented within occupational health and safety requirements and industrial agreement provisions 2.2. Employment conditions are interpreted and applied in the work context 2.3. Employees are informed of their obligations and rights under legislation and the organisation's conditions of employment 2.4. Quality standards required by regulations and instructions are maintained in industry/enterprise work practices 2.5. Work practices are adequately communicated to all aviation personnel and performance difficulties are identified

ELEMENT	PERFORMANCE CRITERIA
3. Implement work environment policy and practices	3.1. Responsibility for implementing policies and practices for a clean, safe and healthy work environment is delegated to appropriate personnel in accordance with regulatory requirements and organisational policy and procedures 3.2. Appropriate reporting systems practices are modified to incorporate improvements in maintaining a safe, clean and healthy work environment 3.3. Work practices and procedures are modified on the basis of incident analysis statistics to reduce/eliminate the causative factors
4. Conduct investigations into injuries and related claims	4.1. Injury reports and associated claims investigations are initiated in the shortest possible time after an incident in accordance with legislative, regulatory and organisational requirements 4.2. Injury and claim statistics are analysed to determine causes and prevent recurrence

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ability to analyse the working environment and develop appropriate work practices
- complying with relevant legislation, rules and regulations
- ability to manage the work environment through delegation of responsibilities to appropriate personnel

Required knowledge

Look for evidence that confirms knowledge of:

- occupational health and safety (OHS) legislation at Commonwealth and state/territory levels
- enterprise and organisational level OHS policies, rules and procedures
- airworthiness regulations and associated documentation relating to workplaces and work practices

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to develop, establish and manage work environment policies and practices.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Legislation, rules and regulations	<i>Legislation, rules and regulations may include:</i> • Commonwealth and state/territory OHS legislation • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence instructions and standards • standing instructions • safety manuals • work procedures • work instructions • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions
Work practices	Work practices apply to: • plant and machinery • all personnel present in work areas
Aspects of the work environment	<i>Aspects of the work environment may include:</i> • lighting • noise • atmospheric contamination • physical hazards • chemical materials • enclosed spaces

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA124B Coordinate change programs in the aviation maintenance environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the promotion and initiation of change within the aviation maintenance environment while observing regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of management processes that promote and initiate desirable changes that will improve individual and organisational effectiveness in the aviation maintenance environment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Promote change within workplace practices	1.1. <i>Change</i> is promoted as an opportunity for improving individual and organisational effectiveness 1.2. Personnel are encouraged to adopt changes which make improvements in individual and organisational effectiveness 1.3. <i>Opportunities and threats</i> presented by change are identified and appropriate responses are planned 1.4. Personnel are involved in designing and implementing change within <i>organisational and regulatory guidelines</i>
2. Initiate change where necessary	2.1. The proposed <i>initiatives for bringing about improvements</i> are supported within the organisation 2.2. Change for the better is initiated where necessary and is managed in a planned and constructive manner 2.3. <i>Consultative processes</i> are initiated

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE
Required skills
Look for evidence that confirms skills in: • interpersonal communication • analysis techniques • problem solving • team skills • monitoring and observation
Required knowledge
Look for evidence that confirms knowledge of: • strengths, weaknesses, opportunities, threats (SWOT) analysis • organisational structure and culture • policy and procedures • legislation and regulations • effects of change in the workplace • change strategies • occupational health and safety (OHS), equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to analyse, promote and manage the initiation of the change process within the aviation maintenance environment.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct

EVIDENCE GUIDE	
	observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Change	<i>Change may come about as a result of changes in:</i> • technology • procedures • policy

RANGE STATEMENT	
	• government legislation • regulations • personnel • finance • ongoing evaluation and feedback
Opportunities	<i>Opportunities can include:</i> • improved maintenance procedures that decrease maintenance times and/or man-hours • improved procedures for the management of maintenance or logistic support activities • improvements in physical working conditions • adoption of more effective tooling or support equipment • improvements to maintenance data
Threats	<i>Threats can include:</i> • adoption of changes that are in violation of regulatory requirements • adoption of changes that are in violation of organisational policy or procedures • failure to recognise additional training or authorisation requirements • failure to fully comply with relevant OHS legislation • failure to get the full support of all stakeholders, including those in other parts of the overall maintenance and logistic support organisation • failure to recognise a need for changes to industrial awards or agreements
Organisational and regulatory guidelines	<i>Organisational and regulatory guidelines may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence regulations and instructions

RANGE STATEMENT	
	• maintenance organisation expositions • continuing airworthiness management organisation expositions • quality manual • procedures manual • standing instructions • work instructions • OHS legislation (state/territory and Commonwealth)
Initiatives for bringing about improvements	<i>Initiatives for bringing about improvements may arise from:</i> • changes to organisational policy and procedures • reform of regulations • changes to training and authorisation requirements • management review processes • suggestions from individual stakeholders • availability of new tools or support equipment • availability of new management technology • industry or original equipment manufacturer periodicals and newsletters • feedback from other operators of the aircraft type or item of aeronautical product
Consultative processes	<i>Consultative processes may include:</i> • consultation with regulators where the change has a regulatory component • consultation with higher management where organisational policy and procedures are involved • consultation with stakeholders elsewhere in the logistic support network • consultation at all levels in the relevant area of the aviation maintenance environment • consultation with stakeholders in the industrial relations system • consultation with suppliers of management systems, tooling or support equipment

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA125B Develop aviation maintenance personnel

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the development of aviation maintenance personnel to comply with regulatory requirements and assist in the achievement of organisational objectives.

Application of the Unit

Application of the unit	This unit requires application of personnel management practices in the development and training of personnel within the aviation maintenance organisation.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Mediate in and settle grievances and disputes	1.1. Problem solving issue resolution procedures are conducted in accordance with <i>relevant policy and procedures</i> 1.2. <i>Grievances and disputes</i> are managed in a timely and respectful manner 1.3. Grievances and disputes are managed to optimise the likelihood of a favourable outcome for all parties 1.4. Individual's rights and obligations are respected and communicated in a clear and concise manner 1.5. Interviews and meetings are conducted in a participative and consultative manner 1.6. Outcomes of proceedings are recorded, stored and made available to authorised personnel in accordance with organisational policy and procedures
2. Motivate team towards achieving quality output	2.1. Team members needs and wants are recognised and where possible incorporated into work assignments consistent with their level of responsibility 2.2. The team's achievements are promoted and rewarded in a way that openly acknowledges the importance of team members' contributions
3. Control allocation of tasks to teams and individuals	3.1. Tasks are allocated to teams and individuals to take into account the needs of the organisation's operational requirements, individual/team goals, development needs, and individual strengths, <i>qualifications and authorisations</i> 3.2. Prompt corrective action is taken in response to actual or potential significant deviations from plans

ELEMENT	PERFORMANCE CRITERIA
4. Evaluate and report individual performance	4.1. Performance expectations based on an individual's situation and work requirements are identified and agreed 4.2. Individual performance is reviewed on an ongoing basis against performance expectation 4.3. Reporting on individual performance is in accordance with the organisation's policies and procedures 4.4. Feedback is provided in a constructive manner 4.5. Performance issues that cannot be rectified or addressed are referred to appropriate personnel according to the organisation's policies and procedures
5. Coordinate individual training	5.1. Individual training requirements are identified to meet the needs of the individual and the organisation 5.2. Individual training is delivered 5.3. Opportunities for individuals to develop and apply competencies on the job are facilitated

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- negotiation and dispute resolution
- performance appraisal
- interpersonal communication
- interviewing
- planning
- application of requirements regarding matching of allocated jobs with qualification and task authorisations

Required knowledge

Look for evidence that confirms knowledge of:

- relevant government legislation

REQUIRED SKILLS AND KNOWLEDGE

- Civil Aviation Regulations (CARs) and Advisory Circulars (ACs)
- Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material
- maintenance organisation expositions
- continuing airworthiness management organisation expositions
- relevant defence regulations and instructions
- maintenance organisation manuals
- occupational health and safety (OHS) legislation
- organisational safety manuals
- organisational policy and procedures manuals
- organisational performance appraisal reporting requirements
- personnel development principles and practices
- equity and diversity
- fraud and ethics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to effectively perform tasks associated with the development of personnel and the resolution of grievances.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for

This unit may be assessed on the job, off the job or a

EVIDENCE GUIDE	
assessment	combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Relevant policy and procedures	<i>Relevant policy and procedures may be found in:</i> • organisational policy manuals • maintenance organisation manual • maintenance management plan • procedures manuals • work instructions • government legislation • defence regulations and instructions • standing instructions • grievance procedures

RANGE STATEMENT	
	• CASRs, Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions
Grievances and disputes	<i>Grievances and disputes may include:</i> • progress towards qualifications • employment area • sexual harassment • equity and diversity • employment conditions • interpersonal differences
Qualifications and authorisations	<i>Qualifications and authorisations may include:</i> • Training Package qualifications issued under the Australian Qualifications Framework (AQF) • certificates issued by Registered Training Organisations (RTOs) for completion of non-accredited training courses • certificates issued on completion of equipment-related training courses • maintenance engineer licences and extensions thereto • aviation maintenance specialist certificates • authorisations as a Civil Aviation Safety Authority (CASA) representative made under the provision of CARs or CASRs • task authorisations made in accordance with maintenance organisation expositions or continuing airworthiness management organisation expositions • task authorisations made in accordance with relevant defence regulations and instructions • task authorisations made in accordance with a maintenance management plan

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA126B Manage aircraft maintenance activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to manage maintenance activities relating to aircraft and aeronautical product within the civil and defence regulatory systems.

Application of the Unit

Application of the unit	This unit requires application of competencies required to develop, implement and evaluate the outcomes of aircraft maintenance activities. Applications include flight lines, hangars and workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop a maintenance program	1.1. <i>Maintenance requirements for aircraft</i> are determined from <i>relevant documentation</i> 1.2. <i>Maintenance tasks</i> are analysed and prioritised 1.3. <i>Resource requirements</i> are identified and allocated to ensure the timely and efficient completion of maintenance tasks
2. Implement a maintenance program	2.1. Roles and responsibilities of maintenance personnel are communicated and agreed 2.2. Appropriate resources and equipment to achieve scheduled tasks are <i>considered</i> and arranged 2.3. Maintenance personnel are regularly consulted to ensure scheduled tasks are being achieved 2.4. <i>Management/stakeholder updates</i> on maintenance progress are provided 2.5. Maintenance activities are monitored to ensure compliance with <i>authorised instructions, policy and procedures.</i> 2.6. <i>Advice and assistance with maintenance activities</i> is provided as required 2.7. <i>Maintenance problems</i> are identified and/or anticipated and avoided or controlled in accordance with the maintenance program 2.8. Maintenance program effectiveness is reviewed and

ELEMENT	PERFORMANCE CRITERIA
	analysed 2.9. Proposed changes to the maintenance program are identified, investigated and negotiated with management/stakeholders
3. Evaluate and report maintenance outcomes	3.1. Final maintenance outcomes are evaluated against the program in accordance with organisational policy and procedures 3.2. Maintenance reports are collated, evaluated and forwarded to appropriate authorities in accordance with organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using documentation and relevant regulations to determine maintenance and reporting requirements
- using material safety data sheets (MSDS) to determine handling precautions and personal protective equipment requirements
- application of occupational health and safety (OHS) requirements
- planning
- communicating
- questioning
- fault diagnosis techniques

Required knowledge

Look for evidence that confirms knowledge of:

- sources of information relating to scheduled and unscheduled maintenance activities and configuration change requirements
- basic project planning techniques, including timing, prioritising, resourcing, monitoring and evaluation of maintenance tasks
- techniques for mapping maintenance activities and recording progress
- the aircraft and systems being maintained
- fault diagnosis and troubleshooting procedures, damage assessment philosophies and procedures, cost-effectiveness considerations for different repair types,

REQUIRED SKILLS AND KNOWLEDGE

- philosophies and considerations in repair versus replacement options
- applicable regulations, organisational policy and procedures manuals, maintenance manuals and instructions
- MSDS
- OHS, equity, fraud and ethics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to set up and implement an aircraft maintenance program, evaluate the outcomes and correctly report the maintenance activities.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not

EVIDENCE GUIDE	
	disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Maintenance requirements for aircraft	<i>Maintenance requirements for aircraft includes:</i> • maintenance of the airframe and aircraft systems, power plant, avionic systems and fitted role equipment
Relevant documentation	<i>Relevant documentation may include:</i> • computer data systems • log books • authorised maintenance manuals • management directives • feedback from maintenance and operating personnel • aircraft flight and technical records • aircraft maintenance program • Civil Aviation Regulations (CARs) and Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material

RANGE STATEMENT	
	• airworthiness directives • maintenance organisation expositions • continuing airworthiness management organisation expositions • aircraft type certificate design certificate • relevant defence regulations and instructions
Maintenance tasks	<i>Maintenance tasks may include:</i> • scheduled • unscheduled • preventative • corrective
Resource requirements	<i>Resource requirements include:</i> • personnel • spare parts and consumables • special equipment • ground support equipment, such as power carts and hydraulic rigs • personal protective equipment • tools
Considerations regarding resource requirements	<i>Considerations regarding resource requirements may include:</i> • personnel numbers • personnel availability • personnel qualifications • personnel authorisations and experience • quantities and availability of parts, consumables special equipment, ground support equipment, personal protective equipment and tools
Management/stakeholder updates	<i>Management/stakeholder updates may include:</i> • verbal reports and briefings • written reports, including notes, worksheets and briefs
Authorised instructions, policy and procedures	<i>Authorised instructions, policy and procedures may include:</i> • manufacturers operating manuals • management directives • maintenance manuals

RANGE STATEMENT	
	• defence regulations and instructions • standing instructions • maintenance management plan • maintenance organisation expositions • continuing airworthiness management organisation expositions • procedures manuals • work instructions • CARs or CASRs, Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • quality assurance instructions • OHS policies and instructions • MSDS
Advice and assistance with maintenance activities	<i>Advice and assistance with maintenance activities may include:</i> • work practices • fault diagnosis procedures • damage assessment • defect investigation • assessment of repair cost-effectiveness • assessment of repair versus replacement options • monitoring of telemetry maintenance data from aircraft during flight operations
Maintenance problems	<i>Maintenance problems may include:</i> • lack of resources or data • unanticipated breakdowns or faults • changes in priorities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA127B Provide technical advice in the maintenance and management of aircraft and aeronautical product

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the provision of technical advice in the civil aviation regulatory environment on aircraft and aeronautical product regarding the maintenance, modification, repair and management of aircraft, their systems and items of aeronautical product.

Application of the Unit

Application of the unit	This unit requires application of technical knowledge to provide advice on the need for modifications, repairs and maintenance requirements within the jurisdiction of the Civil Aviation Safety Authority (CASA). Applications include aircraft, aircraft systems and items of aeronautical product.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations
	AND	

Prerequisite units		
	MEA350A	Select and test aeronautical engineering materials
	OR	
	MEA272A	Apply basic scientific principles and techniques in avionic engineering situations
	AND	
	MEA273A	Select and test avionic engineering materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop an aircraft maintenance program and minimum equipment list	1.1. The requirements for an aircraft maintenance program are determined from <i>relevant regulations and organisational policies and procedures</i> 1.2. An applicable maintenance program is identified or is drafted in accordance with regulatory guidelines 1.3. The proposed maintenance program is submitted for

ELEMENT	PERFORMANCE CRITERIA
	approval 1.4. The requirement for a minimum equipment list is determined from relevant regulations and organisational policies and procedures 1.5. A minimum equipment list is compiled and submitted for approval in accordance with relevant regulations and organisational policies and procedures
2. Develop a continuing airworthiness management organisation exposition	2.1. The need for a continuing airworthiness management organisation exposition is determined from relevant regulations 2.2. A continuing airworthiness management organisation exposition is drafted and submitted for approval in accordance with organisational policies and procedures
3. Develop a maintenance organisation exposition	3.1. The requirement for a maintenance organisation exposition is determined from relevant regulations 3.2. A maintenance organisation exposition is drafted in accordance with regulatory guidelines and organisational policies and procedures
4. Provide mechanical advice in aircraft maintenance	4.1. Independent technical input is provided with regard to aircraft structure and mechanical systems/components 4.2. Knowledge of aircraft structures and specialist input is utilised to determine airworthiness 4.3. Knowledge of aircraft mechanical systems/components and specialist input is utilised to determine airworthiness
5. Provide avionic advice in aircraft maintenance	5.1. Independent technical input is provided with regard to avionic systems/components 5.2. Knowledge of avionic systems/components and specialist input is utilised to determine airworthiness
6. Evaluate and review aircraft maintenance and management system elements	6.1. Aircraft operation and maintenance trends are monitored 6.2. Maintenance management system elements are reviewed against trends and amendments are proposed in accordance with regulatory requirements, organisational policies and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- written and oral communication
- using regulations, policies and procedures to set up maintenance control and management systems
- effective use of trend data and specialist advice to determine airworthiness and propose variations to maintenance schedules, repairs and modifications

Required knowledge

Look for evidence that confirms knowledge of:

- Civil Aviation Regulations (CARs) and Civil Aviation Safety Regulations (CASRs) relating to aircraft/aeronautical product maintenance and maintenance control
- organisational policies and procedures relating to aircraft/aeronautical product maintenance and maintenance control
- aircraft structure
- mechanical systems and components
- aircraft power plants
- avionic systems and components
- occupational health and safety (OHS), equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to set up maintenance control and management systems and provide advice on maintenance, modification and repair of aircraft, their systems and items of aeronautical product. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Relevant regulations and organisational policies and procedures	<i>Relevant regulations and organisational policies and procedures may include:</i> • CARs and Advisory Circulars (ACs) • CASRs, Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions • policy manuals • procedures manuals • quality manuals
Independent technical input	<i>Independent technical input may include:</i> • defect investigation and compilation of service difficulty reports • modification proposals • repair scheme proposals • proposed amendments to servicing schedules and maintenance data and programs • advice to maintenance personnel, senior maintenance managers and higher technical/regulatory authorities
Aircraft structure	<i>Aircraft structure includes:</i> • primary and secondary structural components • seating and cargo restraints
Mechanical systems/components	<i>Mechanical systems/components include:</i> • engines and engine systems and components • propellers and propeller system components • landing gear systems and components • hydro-mechanical systems comprising hydraulic, pneumatic, fuel and components • mechanical systems and components • electrical systems and components • oxygen • furnishings and safety equipment

RANGE STATEMENT	
Specialist input	<i>Specialist input may be obtained from:</i> • professional engineers • NDT technicians • LAMEs with applicable ratings • personnel with CASR Part 145 or Part 42F certifying authorities
Avionic systems/components	<i>Avionic systems/components include:</i> • electrical power generation and distribution • electrical systems • control and warning systems • flight instruments • aircraft data communication • automatic flight and engine control systems • communication systems • navigation systems • radar • role equipment, such as forward-looking infra-red (FLIR) pods
Aircraft operation and maintenance trends	<i>Aircraft operation and maintenance trends may be obtained from:</i> • aircraft flight and technical records • service difficulty reports • maintenance worksheets • log books • continuing analysis maintenance program reports • data from manufacturers and other operators
Management system elements	<i>Management system elements may include:</i> • aircraft maintenance program • minimum equipment list • continuing airworthiness management organisation exposition • maintenance organisation expositions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA128B Provide engineering advice in the modification, maintenance and management of aircraft systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the provision of engineering advice in the defence airworthiness environment on mechanical and avionics systems. The advice is provided in relation to the modification, repair, maintenance and management of aircraft and associated mechanical and avionic systems.

Application of the Unit

Application of the unit	This unit requires application of engineering knowledge to provide advice on the need for modifications, repairs and maintenance requirements within the airworthiness jurisdiction of the Australian Defence Force (ADF).

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA349A	Apply basic scientific principles and techniques in aeronautical engineering situations
	AND	
	MEA350A	Select and test aeronautical

Prerequisite units		
		engineering materials
	OR	
	MEA272A	Apply basic scientific principles and techniques in avionic engineering situations
	AND	
	MEA273A	Select and test avionic engineering materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Provide mechanical systems advice	1.1. <i>Independent technical input</i> in the maintenance, repair and modification design relating to <i>aircraft mechanical systems</i> and structures is provided when requested by maintenance personnel, senior maintenance managers and higher technical authorities

ELEMENT	PERFORMANCE CRITERIA
	1.2. Aircraft mechanical systems knowledge is utilised to determine aircraft airworthiness 1.3. Knowledge of aircraft structures is utilised to determine aircraft airworthiness.
2. Provide avionic systems advice	2.1. Independent technical input in the maintenance and modification design for aircraft avionic systems is provided when requested by maintenance personnel, senior maintenance managers and higher technical authorities 2.2. Aircraft avionic systems knowledge is utilised to determine aircraft airworthiness
3. Conduct/advise an aircraft recovery	3.1. Battle/incident damage and operational capability of an aircraft is evaluated 3.2. Repair methods and/or limits are determined 3.3. An aircraft recovery is planned

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- oral and written communication
- management
- damage assessment including repair scheme development and/or extension
- development of modification proposals
- review of maintenance requirements
- occupational health and safety (OHS), equity, fraud and ethics

Required knowledge

Look for evidence that confirms knowledge of:

- modification proposal development and processing
- repair scheme proposal, including equivalent strength repair design and justification for extension of an approved repair scheme
- management processes for monitoring and reviewing maintenance requirements
- aircraft structure
- aircraft mechanical systems
- aircraft avionic systems
- aircraft recovery procedures

Required skills

- OHS, equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to assemble and provide engineering advice relating to aircraft and aircraft system maintenance, repair and modification design.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

Method of assessment

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application

Application of this unit may relate to:

- scheduled or unscheduled maintenance
- individual or team-related activities

Independent technical input

Independent technical input may be provided:

- utilising subject matter experts and documented technical information
- verbally
- in writing
- in accordance with regulations and organisational policy and procedures
- to operators, engineering officers and executive personnel

Aircraft mechanical systems

Aircraft mechanical systems may include:

- engines
- landing gear systems
- hydro-mechanical systems comprising oil, fuel, hydraulic and pneumatic
- furnishings and safety equipment
- propellers

Aircraft structures

Aircraft structures may include:

- primary and secondary structure
- flight controls
- fairings
- doors

RANGE STATEMENT	
	access panels
Aircraft avionic systems	<i>Aircraft avionic systems may include:</i> - electrical generation and distribution - electrical systems - electrical control and warning - flight instruments - aircraft data communication - automatic flight and engine control - communications - navigation - radar - life support - ordnance

Unit Sector(s)

Unit sector	ADF airworthiness regulatory environment

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA129A Investigate technical aspects of aviation occurrences

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Advanced Diploma training pathways. It covers the competencies required to conduct technical investigations within the Australian Defence Force (ADF) regulatory environment as a result of aviation occurrences.

Application of the Unit

Application of the unit	This unit requires application of required procedures and of technical knowledge in investigating the technical aspects of aviation occurrences within the ADF airworthiness jurisdiction. Applications include aircraft accidents, aircraft incidents and maintenance incidents.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Notify authorities of occurrence	1.1. Authorities are notified of <i>the occurrence</i> in accordance with ADF policy and procedures. 1.2. Specialist advice is provided relevant to the occurrence. 1.3. <i>The investigation</i> is planned in accordance with ADF and statutory requirements.
2. Collect evidence	2.1. Evidence of personnel involved in the occurrence is documented. 2.2. Witnesses are interviewed and information is documented. 2.3. Evidence associated with the occurrence is collated.
3. Analyse occurrence	3.1. Information is analysed in accordance with the established objectives of the investigation. 3.2. Options for action are generated which are consistent with ADF and/or statutory requirements and lead to recommendations that reduce future risk. 3.3. Criteria are specified to enable objective evaluation of the options to be undertaken.
4. Produce report	4.1. All evidence is reviewed and satisfactory engineering conclusions and recommendations are made. 4.2. Conclusions are reviewed with stakeholders.

ELEMENT	PERFORMANCE CRITERIA
	4.3.Recommendations are costed. 4.4.Formal reports are produced in accordance with ADF policy and procedures and forwarded to appropriate authorities.
5. Implement corrective measures	5.1.Measures selected for implementation are feasible in terms of practicality and costing. 5.2.Measures are implemented.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral and written communication
- interviewing
- management and analysis of evidence
- technical aspects relating to the investigation

Required knowledge

Look for evidence that conforms knowledge in:

- ADF policy and procedures
- investigation procedures
- technical aspects relating to the aircraft type and its systems
- application of a no blame culture
- culpability matrix
- OH&S, equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

EVIDENCE GUIDE	
Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to conduct technical investigations associated with aircraft accidents and incidents and maintenance incidents, develop appropriate recommendations, compile applicable reports and implement corrective measures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application

Application of this unit may relate to:

- scheduled or unscheduled maintenance
- individual or team related activities

The occurrence

The occurrence may include:

- aircraft accidents
- aircraft incidents
- maintenance incidents

The investigation

The investigation may be conducted by means of:

- visual observation
- interviews
- review of statements
- technical investigation

Formal reports

Formal reports may be:

- accident and incident reports
- safety reports
- defect reports
- investigation reports

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA130A Manage deployed/detached aviation maintenance activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Advanced Diploma training pathways. It covers the competencies required for planning, implementing and evaluating deployed/detached aviation maintenance activities in the Australian Defence Force (ADF) airworthiness regulatory environment.

Application of the Unit

Application of the unit	This unit requires application of competencies required to plan deployed aircraft maintenance, provide support to deployed maintenance personnel and monitor and evaluate their activities within the ADF airworthiness jurisdiction. Applications include the deployment and detachment away from home base of aircraft that are to be supported by a deployed maintenance team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan aircraft detachment maintenance activities	1.1. <i>Deployment/detachment</i> objectives are ascertained. 1.2. <i>Resource requirements</i> are identified, obtained and allocated. 1.3. <i>Maintenance personnel qualifications and authorisations</i> are validated. 1.4. Liaison with <i>detachment locality authorities</i> is established. 1.5. Detachment activities are scheduled.
2. Prepare maintenance plan	2.1. Maintenance plan incorporates short and long term goals in line with flight/squadron objectives and priorities. 2.2. Maintenance plan conforms to <i>airworthiness regulations, ADF policies and procedures</i>. 2.3. Realistic and relevant work objectives are developed. 2.4. The maintenance plan reflects the resources available.
3. Detach aircraft	3.1. <i>Pre detachment inspections</i> are performed and deficiencies are reported in accordance with ADF policy and procedures. 3.2. Personnel briefings are provided. 3.3. Aircraft and equipment are despatched.

ELEMENT	PERFORMANCE CRITERIA
4. Exercise limited engineering authority	4.1. Maintenance interval extension requests are submitted as required. 4.2. Carried forward unserviceabilities are authorised.
5. Provide technical airworthiness/engineering advice	5.1. Technical advice relating to maintenance and to design of modifications and repairs to aircraft structure/systems is provided to higher authorities .
6. Monitor and evaluate maintenance activities	6.1. Maintenance outcomes are assessed against the maintenance plan goals and objectives 6.2. Deviations/problems are identified, analysed and appropriate responses are initiated. 6.3. Maintenance outcomes are recorded and reported in accordance with ADF policy and procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- planning
- communication
- problem solving
- liaison
- management

Required knowledge

Look for evidence that confirms knowledge of:

- airworthiness regulations
- relevant instructions
- aircraft maintenance documentation
- maintenance report compilation
- modifications and deviations
- defects and safety reports
- OH&S, equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to plan deployed aircraft maintenance, set up the maintenance detachment and provide limited control and oversight of maintenance activities

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

Method of assessment**Guidance information for assessment**

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Deployment/detachment	<i>Deployment/detachment may be to:</i> • military airfields within Australia or overseas • civilian airfields within Australia or overseas • unprepared areas of operations within Australia and overseas
Resource requirements	<i>Resource requirements may include:</i> • personnel • spare parts/fly-away kits • ground support equipment • facilities • vehicles • finance
Maintenance personnel qualifications and authorisations	<i>Maintenance personnel qualifications and authorisations may include:</i> • duty statements • job descriptions • maintenance personnel authorisation workbooks
Detachment locality authorities	<i>Detachment locality authorities may include:</i> • military command • location facilities personnel • civilian authorities • other detached units or organisations
Airworthiness regulations, ADF policies and procedures	<i>Airworthiness regulations, ADF policies and procedures may include:</i> • aircraft maintenance regulations

RANGE STATEMENT	
	• safety manuals • OH&S legislation • defence instructions • standing instructions • local instructions • specific aircraft/equipment maintenance manuals • servicing schedules
Pre detachment inspections	<i>Pre detachment inspections may include:</i> • facilities/accommodation • fuel • technical facilities • site survey • spare parts • fire fighting equipment • personal protective equipment
Higher authorities	<i>Higher authorities may include:</i> • authorised maintenance organisations authorised engineering organisations • Director General Technical Airworthiness • senior commanders

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA131B Manage the custody, transfer and disposal of aircraft, aeronautical product and support equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required for the application of regulations relating to proper custody, transfer and disposal of aircraft, aeronautical product and support equipment.

Application of the Unit

Application of the unit	This unit requires application of procedures relating to the custody, transfer and disposal of aircraft, aeronautical product and support equipment. Applications include aircraft, items of aeronautical product, special test equipment and ground support equipment

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain proper custody of aircraft, aeronautical product and support equipment	1.1. Aircraft and aeronautical product are maintained and/or stored in facilities or circumstances that comply with <i>regulatory requirements and organisational policies and procedures</i> 1.2. <i>Special test equipment</i> is stored in appropriate environmental conditions and calibration is carried out at required intervals 1.3. <i>Ground support equipment</i> is stored and operated in an environment that will prevent undue deterioration or wear 1.4. Storage and control requirements are observed for <i>hazardous and controlled materials</i> 1.5. Maintenance records and documentation are maintained in accordance with regulatory requirements, organisational policy and procedures
2. Transfer aircraft, aeronautical product and support equipment between organisations	2.1. Aircraft, aeronautical product and support equipment are transferred between organisations in accordance with regulatory requirements, organisational policy and procedures 2.2. Documentation and maintenance records are transferred between organisations in accordance with regulatory requirements, organisational policy and procedures
3. Dispose of aircraft,	3.1. Aircraft, items of aeronautical product and support

ELEMENT	PERFORMANCE CRITERIA
aeronautical product and support equipment	equipment are correctly classified for disposal and appropriate documentation is compiled to allow disposal in accordance with regulatory requirements, organisational policy and procedures 3.2. Aircraft and items of aeronautical product are prepared as directed for disposal 3.3. Maintenance records and documentation are retained and stored in accordance with regulatory requirements, organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- administration
- management
- application of technical knowledge in the custody and disposal of aircraft, aeronautical product and support equipment
- compliance with regulatory requirements
- compliance with environmental protection requirements

Required knowledge

Look for evidence that confirms knowledge of:

- aircraft maintenance requirements/instructions
- aeronautical product maintenance requirements
- test equipment calibration requirements
- regulatory requirements relating to custody, transfer and disposal of aircraft, aeronautical product, support equipment and environmental protection
- organisational policies and procedures relating to custody, transfer and disposal of aircraft, aeronautical product and support equipment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to implement procedures associated with the custody, transfer and disposal of aircraft, items of aeronautical product and support equipment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

Method of assessment

Guidance information for assessment

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Regulatory requirements and organisational policies and procedures	<i>Regulatory requirements and organisational policies and procedures may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions • policy manuals • procedures manuals • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence regulations and instructions • maintenance management plan • standing instructions
Special test equipment	<i>Special test equipment may include:</i> • measuring equipment • NDT equipment • system test boxes • test stands • automatic test equipment
Ground support equipment	<i>Ground support equipment may include:</i> • power carts • hydraulic rigs • pneumatic rigs

RANGE STATEMENT	
	• refuelling equipment • towing equipment
Hazardous and controlled materials	<i>Hazardous and controlled materials may include:</i> • chemicals classified as hazardous • items, such as Halon fire extinguishers, that require an Environmental Protection Agency (EPA) licence for storage • materials that have EPA standards for storage and use

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA132A Manage budgetary resources in the aviation maintenance environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to manage budgeting activities in aircraft and aeronautical product maintenance and logistic support activities other than major maintenance budgets associated with integrated logistic support maintenance programs. Competencies related to these programs are partly covered by MEA139A Perform aviation maintenance-related integrated logistic support management activities. Individuals involved in the management of such programs may, as an alternative to MEA132A, consider attainment of PSPMNGT610A Manage public sector financial resources, from the Public Sector Training Package. Those who are also owners and/or business managers of maintenance organisations may, instead of MEA132A, consider attaining BSBMGT503A Prepare budgets and financial plans and BSBMGT504A Manage budgets and financial plans, from the Business Services Training Package.

Application of the Unit

Application of the unit	This unit requires application of procedures for the development and monitoring of a budget. Applications include aircraft and aeronautical product maintenance organisations, including engineering and logistic support areas.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan a budget	1.1. Workplace resource needs are identified and documented 1.2. Resource needs are costed 1.3. Budget document is prepared and processed in accordance with organisational requirements
2. Manage the acquisition and allocation of budgetary resources	2.1. Systems for monitoring expenditure are maintained 2.2. Budgets are monitored to ensure expenditure is within targets 2.3. Appropriate technology is applied to the resource

ELEMENT	PERFORMANCE CRITERIA
	management system 2.4. Changing priorities are identified and discussed with applicable personnel 2.5. Budget document is amended in response to changing activities or costs 2.6. Accountability requirements are satisfied
3. Evaluate and report budget outcomes	3.1. Expenditure against planned budget is evaluated 3.2. Impacts on financial changes/constraints on work unit objectives are evaluated and documented 3.3. Report on expenditure/budget is prepared in accordance with organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- financial management
- monitoring
- evaluation and decision making
- mathematical calculation

Required knowledge

Look for evidence that confirms knowledge of:

- organisational budgetary processes
- tasking over the period of the budget
- requirements in Civil Aviation Safety Regulations (CASR) regarding financial status of maintenance organisations
- fraud and ethics

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to prepare and apply budgetary resources in the aviation maintenance management environment.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all materials and documentation required and must be permitted to refer to any relevant workplace procedures, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Workplace resource needs	<i>Workplace resource needs may include:</i> • personnel • finance • equipment • facilities • items of aeronautical product • breakdown spares and materials • consumables
Budget	<i>Budget may be:</i> • annual • length of project/activity • quarterly • for another period of time as required
Systems for monitoring expenditure	<i>Systems for monitoring expenditure may include:</i> • paper-based systems • computerised systems • receipts and invoices • quotes

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA133B Communicate aviation technical and maintenance management knowledge

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Diploma and Advanced Diploma training pathways. It covers the competencies required to effectively communicate aviation technical and maintenance management knowledge.

Application of the Unit

Application of the unit	This unit requires application of written and oral communication skills relating to aviation technical and maintenance management knowledge. Applications include the evaluation of written technical communication and the delivery of verbal briefings.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Evaluate written technical communication	1.1. Content of written technical communication is checked for accuracy and appropriateness 1.2. Format is checked against regulatory and organisational policy and procedures 1.3. The need for additional information is identified and writer advised of same 1.4. Verified communication is actioned in accordance with regulatory requirements, organisational policy and procedures
2. Present technical and non-technical briefings	2.1. Briefing is planned and prepared in a well structured manner 2.2. Briefing is delivered in an audible, articulate manner 2.3. Information delivered is accurate 2.4. Audiovisual equipment, where applicable, is used in an effective, professional manner

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE
Required skills
Look for evidence that confirms skills in: • oral communication • written communication • evaluation • planning of briefings and use of aids to delivery
Required knowledge
Look for evidence that confirms knowledge of: • applicable technical aspects • requirements for written communication • planning and delivery of briefings

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to evaluate written technical communication and deliver verbal briefings on a wide range of topics related to maintenance management.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for	This unit may be assessed on the job, off the job or a

EVIDENCE GUIDE	
assessment	combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team related activities
Written technical communication	<i>Written technical communication may include:</i> • instructions • reports • requests being submitted in accordance with regulatory requirements
Regulatory requirements, organisational policy and procedures	<i>Regulatory requirements, organisational policy and procedures may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs)

RANGE STATEMENT	
	• Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions • policy manuals • procedures manuals • quality manuals • work instructions • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence instructions • standing instructions • maintenance management plans
Briefing	<i>Briefing may be for:</i> • employees of the organisation • business associates, such as teaming partners • clients • contractors and subcontractors • representatives of regulatory bodies • higher authorities • visitors
Information	<i>Information may include:</i> • changes to policy and procedures or regulations • workload requirements • organisational activities • organisational familiarisation • technical knowledge and skills • work procedures • non-technical matters

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA134B Establish, maintain and evaluate the organisation's occupational health and safety system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to establish, maintain and evaluate an organisation's occupational health and safety (OHS) system in order to ensure that the workplace is, so far as is practicable, safe and without risks to the health of employees. The unit is based on the National Guidelines for integrating OHS competencies into national industry competency standards (NOHSC: 7025, 1998).

Application of the Unit

Application of the unit	This unit requires application of OHS legislation and principles to establish, maintain and evaluate an OHS system within the maintenance organisation. Applications include flight lines, hangars and workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish and maintain the framework for the OHS system	1.1.OHS policies are developed which clearly express the organisation's commitment with respect to OHS within the area of managerial responsibility and how <i>relevant OHS legislation</i> will be implemented, consistent with overall organisational policies 1.2.OHS responsibilities and duties which will allow implementation and integration of the OHS system are clearly defined, allocated and included in job descriptions and duty statements for all relevant positions 1.3.Financial and human resources for the operation of the OHS system are identified and sought in a timely and consistent manner 1.4.Information on the OHS system and procedures for the area of managerial responsibility is provided and explained in a form that is readily accessible to employees
2. Establish and maintain participative arrangements for the management of OHS	2.1.<i>Appropriate consultative processes</i> are established and maintained in consultation with employees and their representatives in accordance with relevant OHS legislation and consistent with the organisation's overall process for consultation

ELEMENT	PERFORMANCE CRITERIA
	2.2. Issues raised through participation and consultation are dealt with and resolved promptly and effectively in accordance with procedures for issue resolution 2.3. Information about the outcomes of participation and consultation is provided in a manner accessible to employees
3. Establish and maintain procedures for identifying hazards	3.1. Existing and potential hazards within the area of managerial responsibility are correctly identified and identification confirmed in accordance with OHS legislation, codes of practice and trends identified from the OHS records system 3.2. A procedure for ongoing identification of hazards is developed and integrated within systems of work and procedures 3.3. Activities are appropriately monitored to ensure that this procedure is adopted effectively throughout the area of managerial responsibility 3.4. Hazard identification is addressed at the planning, design and evaluation stages of any change in the workplace to ensure that new hazards are not created
4. Establish and maintain procedures for assessing risks	4.1. Risks presented by identified hazards are correctly assessed in accordance with OHS legislation and codes of practice 4.2. A procedure for ongoing assessment of risks is developed and integrated within systems of work and procedures 4.3. Activities are monitored to ensure that this procedure is adopted effectively throughout the area of managerial responsibility 4.4. Risk assessment is addressed at the planning, design and evaluation stages of any change within the area of managerial responsibility to ensure that the risk from hazards is not increased
5. Establish and maintain procedures for controlling risks	5.1. Measures to control assessed risks are developed and implemented in accordance with the hierarchy of control, relevant OHS legislation, codes of practice and trends identified from the OHS records system 5.2. When measures that control a risk at its source are not immediately practicable, interim solutions are implemented until a control measure is developed 5.3. A procedure for ongoing control of risks, based on the hierarchy of control, is developed and integrated

ELEMENT	PERFORMANCE CRITERIA
	within general systems of work and procedures 5.4. Activities are monitored to ensure that the risk control procedure is adopted effectively throughout the area of managerial responsibility 5.5. Risk control is addressed at the planning, design and evaluation stages of any change within the area of managerial responsibility to ensure that adequate risk control measures are included 5.6. Inadequacies in existing risk control measures are identified in accordance with the hierarchy of control, and resources enabling implementation of new measures are sought and/or provided according to appropriate procedures
6. Establish and maintain organisational procedures for dealing with hazardous events	6.1. Potential hazardous events are correctly identified 6.2. Procedures which would control the risks associated with hazardous events and meet any legislative requirements as a minimum are developed in consultation with appropriate emergency services 6.3. Appropriate information and training is provided to all employees to enable implementation of the correct procedures in all relevant circumstances
7. Establish and maintain an OHS program	7.1. An OHS training program is developed and implemented to identify and fulfil employees' OHS training needs as part of the organisation's general training program
8. Establish and maintain a system for OHS records	8.1. A system for keeping occupational health and safety records is established and monitored to allow identification of patterns of occupational injury and disease within the area of managerial responsibility.
9. Evaluate the organisation's OHS system and related policies, procedures and programs	9.1. The effectiveness of the OHS system and related policies, procedures and programs is assessed according to the organisation's aims with respect to OHS 9.2. Improvements to the OHS system are developed and implemented to ensure more effective achievement of the organisation's aims with respect to OHS 9.3. Compliance with OHS legislation and codes of practice is assessed to ensure that legal OHS standards are maintained as a minimum

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ability to analyse working environment and design appropriate OHS management systems
- ability to analyse relevant data and evaluate OHS system effectiveness
- ability to assess resources to establish and maintain OHS management systems

Required knowledge

Look for evidence that confirms knowledge of:

- provisions of relevant OHS legislation
- principles and practice of effective OHS management
- management arrangements relating to regulatory compliance
- enterprise hazards and risks, control measures and relevant expertise required
- characteristics and composition of workforce and their impact on OHS management
- relevance of enterprise management systems to OHS management

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to effectively utilise OHS legislation and organisational policies and procedures to establish, maintain and evaluate an OHS system.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid,

EVIDENCE GUIDE	
	sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance performed on flight lines, in hangars and in workshops • individual or team-related activities
This competency is to be exhibited in accordance with all	• state/territory/Commonwealth OHS Acts, regulations and codes of practice, including

RANGE STATEMENT	
relevant OHS legislation, particularly:	regulations and organisational codes of practice relating to hazards present in the workplace • general duty of care under OHS legislation and common law; requirements for the maintenance and confidentiality of occupational injury and disease • requirements for provision of OHS information and training • provisions relating to health and safety representatives and/or OHS committees • provisions relating to OHS issue resolution • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material
Establish and maintain the framework for OHS may include:	• policy development and updating • determining the ways in which OHS functions will be managed. This may include distinct OHS management activities, or inclusion of OHS functions within a range of management functions and operations, such as maintenance of plant and equipment; purchasing of materials and equipment • designing operations, work flow and materials handling; planning or implementing alterations to site, plant, operations or work systems; mechanisms for review and allocation of human, technical and financial resources needed to manage OHS, including defining and allocating OHS responsibilities for all relevant positions • mechanisms for keeping up to date with relevant information and updating the management arrangements for OHS, for example, information on health effects of hazards, technical developments in risk control and environmental monitoring and changes to legislation • mechanisms to assess and update OHS arrangements relevant to legislative requirements; a system for communicating OHS information to employees, supervisors and managers within the enterprise
Appropriate consultative	• OHS committees and other committees, for

RANGE STATEMENT	
processes for management of OHS may cover:	- example, consultative, planning and purchasing - health and safety representatives; employee and supervisor involvement in OHS management activities, for example, OHS inspections, audits, environmental monitoring, risk assessment and risk control - procedures for reporting hazards, risks and OHS issues by managers and employees - inclusion of OHS in consultative or other meetings and processes
Establish and maintain procedures for identifying hazards may include developing and updating procedures for:	- workplace inspections, including plant and equipment; audits - maintaining and analysing OHS records, including environmental monitoring and health surveillance reports - maintenance of plant and equipment - reviews of materials and equipment purchases, including manufacturers and suppliers information - employee reporting of OHS issues
Establish and maintain procedures for assessing risks may include developing and updating procedures for:	- determining the likelihood and severity of adverse consequences from hazards - OHS audits; workplace inspections; maintenance of plant and equipment; purchasing of materials and equipment - planning or implementing alterations to site, operations or work systems - analysis of relevant records and reports, for example, injuries and incidents, hazardous substances inventories/registers, audit and environmental monitoring reports and OHS committee records
Establish and maintain procedures for controlling risks may include developing and updating procedures for:	- assessing the OHS consequences of materials, plant or equipment prior to purchase - obtaining expert advice; appropriate application of measures according to the hierarchy of control, namely: elimination of the risk - engineering controls - administrative controls - personal protective equipment - designing safe operations and systems of work; inclusion of new OHS information into procedures

RANGE STATEMENT	
	checking enterprise compliance with regulatory requirements
Establish and maintain organisational procedures for hazardous events may include developing and updating procedures for:	- making inventories of, and inspecting, high risk operations - inspecting systems and operations associated with potentially hazardous events, for example, emergency communications, links to emergency services, fire fighting, chemical spill containment, bomb alerts and first aid services
Establish and maintain an OHS training program may include:	- arrangements for ongoing assessment of training needs, for example, relating to supervisors and managers - specific hazards; specific tasks or equipment - emergencies and evacuations - training required under OHS legislation - allocation of resources for OHS training, including acquisition of training resources, development of staff training skills and purchase of training services - induction training; training for new operations, materials or equipment
Establish and maintain a system for keeping OHS records may cover:	- identifying records required under OHS legislation, for example, worker's compensation and rehabilitation records - hazardous substances registers; material safety data sheets (MSDS) - major accident/injury notifications - certificates or licences - manufacturers and suppliers OHS information - OHS audits and inspection reports - maintenance and testing reports - workplace environmental monitoring and health surveillance records - records of instruction and training - first aid/medical post records
Effectiveness of the OHS system and related policies, procedures and programs is assessed through:	- reviewing the effectiveness of the OHS management system - regular review of operating procedures - regular analysis of OHS records - audits against OHS legislative requirements

Unit Sector(s)

Unit sector	

Competency field

Competency field	Occupational health and safety

Co-requisite units

Co-requisite units		

MEA135A Use computers in aviation maintenance-related integrated logistic support activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Diploma and Advanced Diploma training pathways. It covers the competencies required to effectively use computers in support of maintenance-related integrated logistic support (ILS) activities and comply with regulatory requirements relating to the compilation and safeguarding of data.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the use of the Internet, word processing, spreadsheets, databases and project planning software to perform tasks relating to ILS activities associated with aviation maintenance, including aircraft technical records.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use word processing software	1.1. Correspondence is drafted using word processing software 1.2. Reports including tables are drafted using word processing software 1.3. Instructions are drafted and amended using word processing software
2. Use spreadsheets	2.1. Spreadsheets used within the enterprise are used to obtain data 2.2. Enterprise spreadsheets are updated through data input 2.3. A simple spreadsheet is developed for a <i>typical ILS-related application</i>
3. Use databases	3.1. <i>Databases used for maintenance-related ILS activities</i> within the enterprise are used to obtain data 3.2. Databases are populated with data as required
4. Use project-planning software	4.1. Project-planning software is used to plan a <i>typical maintenance-related ILS task</i> 4.2. Project-planning software is used to monitor the progress of a task 4.3. Use and input data to enterprise maintenance task management software, where applicable
5. Use the internet	5.1. Regulatory information is obtained from applicable

ELEMENT	PERFORMANCE CRITERIA
	internet websites 5.2. Technical data is obtained from Internet websites
6. Maintain and store backup copies of data	6.1. Required media for backup copies of data is determined 6.2. Backup copies of data are made and are updated as required by regulatory requirements, organisational policy and procedures 6.3. Backup copies of data are stored in accordance with regulatory requirements, organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- use of word processing software
- development and use of spreadsheets
- populating and obtaining data from databases
- use of project planning software
- use of the internet to obtain regulatory and technical data

Required knowledge

Look for evidence that confirms knowledge of:

- types of word processing software commonly used in the maintenance-related ILS environment
- development and use of spreadsheets
- database usage in the maintenance-related ILS environment
- use of project planning software and the types of task management software used by maintenance organisations
- internet websites relating to regulatory requirements, standards and specifications
- use of internet search engines to obtain technical and commercial data
- procedures for backing up and storing data

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to use computer software and the internet effectively in support of maintenance-related ILS activities
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Spreadsheets	<i>A typical ILS-related application for a spreadsheet may include:</i> • costing a maintenance task or proposed modification • assessing the economic value of a proposed repair • costing a training program for maintenance personnel • management of items of aeronautical product both on and off aircraft • management of life critical parts • maintenance programs
Databases	<i>Databases used for maintenance-related ILS activities may include:</i> • life cycle costing data • baselines for reliability, availability and maintainability • life support analysis record data • personnel task authorisations and training records • management of items of aeronautical product both on and off aircraft • management of life critical parts • maintenance programs
Project planning software	<i>A typical maintenance-related ILS task for project planning software may include:</i> • planning an aircraft maintenance task • planning a modification program • planning a maintenance personnel training

RANGE STATEMENT	
	program
Technical data	<i>Technical data may include:</i> • standards • specifications • vendor data on materials, piece parts and components • engineering data
Required media for backup copies of data	<i>Required media for backup copies of data may be specified in:</i> • regulations • organisational policies and procedures • contract requirements
Regulatory requirements, organisational policy and procedures	<i>Regulatory requirements, organisational policy and procedures may include:</i> • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions • aircraft maintenance programs • quality manuals • procedures manuals • work instructions • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence regulations and instructions • standing instructions • maintenance management plan • applicable overseas airworthiness regulations such as Federal Aviation Regulations and European Aviation Safety Regulations

Unit Sector(s)

Unit sector	

Competency field

Competency field	Integrated logistic support

Co-requisite units

Co-requisite units		

MEA136A Assess aviation maintenance spares and manage repairable items

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Diploma and Advanced Diploma training pathways. It covers the competency required to assess spares and manage repairable items in aviation maintenance activities while complying with relevant airworthiness regulations.

Application of the Unit

Application of the unit	This unit requires application of competencies required to apply integrated logistic support procedures in the assessment of spares and the management of repairable items. Applications include aircraft and mechanical and avionic items of aeronautical product.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA135A	Use computers in aviation maintenance-related integrated logistic support activities

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Perform spares assessment activities	1.1. Enterprise <i>spares assessment and supply information systems</i> are identified and applied 1.2. Maintenance data, spares usage data and trends are monitored and required holdings of spares are varied as required 1.3. Spares availability problems are identified and strategies are determined to resolve the problems 1.4. Where applicable, <i>suitable substitute parts</i> are identified and necessary engineering approvals obtained in accordance with <i>applicable regulations, organisational policy and procedures</i> 1.5. Acceptable sources of substitute parts are identified and requirements for documentation, such as certification reports and release notes, are specified in accordance with regulatory requirements, organisational policy and procedures 1.6. Configuration management requirements are observed in spares assessing 1.7. Data required for input to <i>integrated logistic support records</i> is provided where applicable
2. Manage repairable	2.1. Maintenance and reliability data is monitored and

ELEMENT	PERFORMANCE CRITERIA
items	changes to maintenance programs are proposed where necessary 2.2. Documentation is raised to allocate repairable items to maintenance facilities in accordance with contractual requirements, organisational policy and procedures 2.3. Any specific investigation or additional maintenance requirements are specified 2.4. Data required for input to integrated logistic support records is provided where applicable

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using software packages relevant to spares assessing and repairable item management
- oral communication
- written communication
- problem solving
- application of regulatory and procedural requirements
- identification and resolution of problems relating to availability of spares

Required knowledge

Look for evidence that confirms knowledge of:

- integrated logistic support principles relating to spares assessing, repairable item management and configuration management
- software packages used by the enterprise for spares assessment, supply management and repairable item management
- use of drawings, standards and specifications to identify substitute piece parts and materials
- use of catalogues and specifications to identify substitute components (items of aeronautical product)
- regulations, organisational policies and procedures relating to spares assessment and repairable item management

REQUIRED SKILLS AND KNOWLEDGE

- occupational health and safety (OHS) requirements relating to substitute piece parts, materials and components
- fraud and ethics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to effectively apply organisational procedures and integrated logistic support principles relating to the assessment of spares and the management of repairable items.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Spares assessment and supply information systems	<i>Spares assessment and supply information systems may be:</i> • manual or computer-based systems • systems developed within the organisation or proprietary systems purchased by the organisation
Suitable substitute parts	<i>Suitable substitute parts may be identified from:</i> • modification data • drawings, standards and specifications in the case of piece parts and materials • manufacturers catalogues and specifications in the case of complete components (items of aeronautical product)
Applicable regulations, organisational policy and procedures	<i>Applicable regulations, organisational policy and procedures may include:</i> • Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and

RANGE STATEMENT	
	Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions • AAP 7001.053 Technical Airworthiness Maintenance Manual • organisational policy manuals • quality manuals • organisational procedures manuals • work instructions • defence regulations and instructions • maintenance management plan • standing instructions
Integrated logistic support records	<i>Integrated logistic support records may include:</i> • logistic support analysis plans • life cycle costing data • failure modes, effects and criticality analysis • baselines for reliability, availability and maintainability • life support analysis record data
Repairable items	<i>Repairable items may include:</i> • removable structural components • mechanical components • items of role equipment • hydraulic, pneumatic and fuel components • items of safety equipment • fire detection and extinguishing components • engines and engine components • propellers and rotors • electrical system components • instrument system components • radio system components • electronic systems components
Investigation or additional maintenance requirements	<i>Investigation or additional maintenance requirements may include:</i> • service difficulty (defect) report investigation • incident investigation • warranty claims • modifications

RANGE STATEMENT

	• compliance with airworthiness directives or special technical instructions • service bulletin compliance

Unit Sector(s)

Unit sector	

Competency field

Competency field	Integrated logistic support

Co-requisite units

Co-requisite units		

MEA137A Write aviation technical publications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the competencies required to draft and process aviation technical publications in accordance with relevant standards and regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the researching of data, drafting and processing of technical publications and amendments to technical publications. Applications include maintenance manuals, operating instructions, parts catalogues, procedures manuals and related technical publications.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA135A	Use computers in aviation maintenance-related integrated logistic support activities

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Research data	1.1. <i>The required medium, style and layout</i> are determined. 1.2. <i>Relevant data</i> is obtained or accessed. 1.3. Potential problems are identified and <i>relevant experts</i> are identified and consulted. Problem resolution strategies are determined.
2. Draft publication or publication amendment	2.1. The publication or amendment is drafted using relevant guidelines and specified software package. 2.2. Required graphics are selected and illustrator briefs are raised. 2.3. Copyright legislation is observed. 2.4. Completed graphics are inserted into the draft and annotations/labels added. 2.5. The draft is prepared for publishing and is submitted for editorial review.
3. Process draft publication or amendment	3.1. Proof copy of the publication or amendment is submitted for client acceptance. 3.2. Publication or amendment is published. 3.3. The publication management database is updated and the completed publication is delivered or

ELEMENT	PERFORMANCE CRITERIA
	distributed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- research
- utilisation of international document standards such as IATA and GAMA
- oral communication
- written communication
- problem solving
- use of word processing software and graphics packages

Required knowledge

Look for evidence that confirms knowledge of:

- word processing and graphics packages used for technical publication and publication amendment drafting
- publication writing conventions, standards and specifications
- the use of style guides
- illustration techniques
- reading of engineering drawings, including:
 - standard drawing sheets and drawing layouts
 - types of drawing
 - engineering standards and specifications
 - technical terms and abbreviations
 - sectioned views
 - dimensioning
 - tolerancing of dimensions
 - types of fit
 - aircraft standard hardware
 - screw threads
 - threaded components and washers
 - locking devices

REQUIRED SKILLS AND KNOWLEDGE

- rivets
- special structural fasteners
- spur gears
- welding symbols and geometry tolerancing
- surface texture
- material specifications and metal surface treatment
- reading of electrical and electronic circuits and wiring diagrams
- development of system schematics
- development of block diagrams
- sketching
- use and development of logic charts
- development of fault diagnosis guides
- the preparation of illustrators' briefs
- the preparation of indexes to publication contents
- problem solving methodology
- regulations relating to technical publications
- OH&S legislation
- for print-based publications, procedures for processing drafts through DTP to printing, binding and distribution
- for electronic format publications, the principles for publication database systems and the development of input data
- requirements for, and methods of, maintaining publication records

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to research, draft and process technical publications and amendments thereto.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

EVIDENCE GUIDE	
	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team related activities
The required medium	<i>The required medium may be:</i> • print-based

RANGE STATEMENT	
	• electronic • microfiche
Style and layout	<i>Style and layout may be determined from:</i> • an applicable style guide • contract requirements • industry standards and specifications
Relevant data sources	<i>Relevant data sources may include:</i> • design and production data and drawings • parts and materials listings • operating procedure documentation • maintenance schedules • modification instructions and service bulletins • manufacturer's and trade catalogues • relevant legislation and regulations
Relevant experts	<i>Relevant experts may include:</i> • the client • design engineers and staff • production staff • component and material suppliers • regulator representatives

Unit Sector(s)

Unit sector	

Competency field

Competency field	Integrated logistic support (ILS)

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA138B Perform aviation technical publication management activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to manage the drafting, publication, distribution and control of technical publications while complying with applicable regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the application of editorial and management knowledge and skills in the production, publication, distribution and amendment of technical publications. Applications include maintenance manuals, operating instructions, parts catalogues, procedures manuals and related technical publications.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA137A	Write aviation technical publications

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage the drafting and publication of technical publications	1.1. The required <i>style for technical publications</i> is determined and specified 1.2. Technical publication drafts are edited
2. Manage the amendment of technical publications	2.1. <i>The requirement for publication amendment</i> action is identified 2.2. Amendment action is initiated 2.3. Draft amendments are <i>edited</i>
3. Manage the distribution and control of technical publications	3.1. A publication distribution and amendment status database is established 3.2. Publications are managed in accordance with <i>regulatory requirements, organisational policies and procedures</i> 3.3. The operation of the publication distribution and control system is monitored

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- specifying the style and layout of technical publications
- determining the need for amendment action
- effective control of technical publication distribution
- oral communication
- written communication

Required knowledge

Look for evidence that confirms knowledge of:

- layout, content, production and use of technical publication style guides
- applicable publication standards and systems, including ATA100 and Australian Air publications
- copyright legislation
- graphics conventions and techniques
- desktop publishing software systems
- printing methods
- binder systems
- regulations governing the production, amendment, custody and distribution of technical publications
- version control procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform management activities relating to the production, amendment and distribution of technical publications.

Critical aspects for assessment and

Assessors must be satisfied that the candidate can

EVIDENCE GUIDE	
evidence required to demonstrate competency in this unit	competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance

RANGE STATEMENT	
	individual or team-related activities
Specifying style for technical publications	<i>Specifying style for technical publications may involve:</i> - determination of the client's requirements - identification of applicable standards and specifications for publications within the industry - identification of any applicable regulatory requirements - selection of an appropriate publishing system - development and issue of a style guide that specifies: - writing style - layout - fonts - graphics selection and conventions - procedures for dealing with copyright issues - requirements for processing of drafts - preparation for publication
The requirement for publication amendment action	<i>The requirement for publication amendment action may arise from:</i> - publication user feedback - modifications to systems or components - test procedure development or refinement - quality system audits - service bulletins - compliance with regulatory requirements
The editing process	<i>The editing process may involve checking for:</i> - compliance with the style guide - completeness and ease of understanding - appropriate use of graphics - observance of applicable regulations and legislation including copyright - final draft mark-up for desktop publishing - application of version control procedures
Regulatory requirements, organisational policies and	<i>Regulatory requirements, organisational policies and procedures may be found in:</i>

RANGE STATEMENT**procedures**

- Civil Aviation Regulations (CARs) and associated Advisory Circulars (ACs)
- Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material
- maintenance organisation expositions
- continuing airworthiness management organisation expositions
- organisational policy manuals
- procedures manuals
- quality manuals
- AAP 7001.053 Technical Airworthiness Maintenance Manual
- defence regulations and instructions
- maintenance management plan
- standing instructions

Unit Sector(s)**Unit sector****Competency field****Competency field**

Integrated logistic support

Co-requisite units**Co-requisite units**

MEA139A Perform aviation maintenance-related integrated logistic support management activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Advanced Diploma training pathways. It covers the competencies required to perform a range of maintenance-related integrated logistic support activities at a managerial level within applicable airworthiness regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to ILS elements and related data management and analysis tools in the maintenance-related management and support of systems throughout their life of type. Applications include support of maintenance on aircraft, aircraft systems, avionics systems and items of aeronautical product.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain logistic support analysis plans	1.1.Logistic support analysis plans are reviewed in line with trends in system supportability and affordability. 1.2.Revisions are proposed to logistic support analysis plans.
2. Perform life cycle cost analysis	2.1.Actual and anticipated costs <i>through to life of type</i> are identified. 2.2.Cost data is <i>analysed</i>.
3. Establish and maintain baselines for reliability, availability and maintainability	3.1.Data on in-service reliability, availability and maintainability is gathered. 3.2.<i>Data is reviewed</i> against established baselines and action is initiated to deal with deviations from the established baselines.
4. Revise logistic support analysis record data	4.1.Logistic support analysis parameters are analysed using current data. 4.2.<i>Analysis results</i> are entered in the logistic support analysis record.
5. Manage data	5.1.<i>A technical data management system</i> is developed and managed in accordance with contractual and <i>regulatory requirements</i>. 5.2.<i>The relevance of technical data</i> is monitored and amendment action is initiated where necessary. 5.3.Logistic support management information systems

ELEMENT	PERFORMANCE CRITERIA
	are applied and supported.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication
- written communication
- populating and extracting data from databases
- task analysis
- applying ILS principles

Required knowledge

Look for evidence that confirms knowledge of:

- ILS management and support philosophy and practice
- logistic support analysis (LSA) concepts and methods, including:
 - preparation of LSA plans
 - management and conduct of LSA programs
 - supportability analysis
 - task analysis
 - LSA record population
- reliability, availability and maintainability (RAM) determination and application, including:
 - baseline determination and application
 - RAM modelling
 - reliability and maintainability apportionment
- data management concepts and methods

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to perform management-related ILS activities in support of the maintenance of aircraft, systems and items of aeronautical product.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all relevant ILS management tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Life cycle cost analysis	<i>Life cycle cost analysis includes:</i> • the systematic identification and analysis of all actual and anticipated costs associated with implementing and sustaining a system throughout its service life
Costs through to life of type	<i>Costs through to life of type may arise from:</i> • operation • engineering support • maintenance support • supply support • facilities costs • personnel costs
Data analysis	<i>Data analysis:</i> • may be performed using enterprise databases and analysis tools
Data review	<i>Data is reviewed:</i> • Using enterprise databases and analysis tools
Analysis Results	Analysis results may include: • In-service failure mode effects and criticality analysis • Corrective maintenance analysis • Reliability centred maintenance analysis • Maintenance task analysis • Repair level analysis
Regulatory requirements	<i>Regulatory requirements may be found in:</i> • Civil Aviation Regulations or Civil Aviation

RANGE STATEMENT	
	Safety Regulations AAP 7001.053 Technical Airworthiness Maintenance Manual
A technical data management system	<i>A technical data management system should provide for:</i> - Maintenance of all applicable technical data - Retention of original and back-up data in separate locations - Storage in a manner that minimises the risk of data loss, theft or destruction
The relevance of technical data	<i>The relevance of technical data may be determined through:</i> - Monitoring engineering, maintenance and supply support activities - Utilising user feedback

Unit Sector(s)

Unit sector	

Competency field

Competency field	Integrated logistic support (ILS)

Co-requisite units

Co-requisite units		

MEA140A Supervise aviation maintenance teams and perform maintenance quality inspections

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the competency required to supervise maintenance teams and perform maintenance quality inspections in the Australian Defence Force (ADF) airworthiness regulatory environment. Candidates must have been appointed as a Maintenance Quality Inspector (MQI) or Independent Inspector in order to be assessed for this unit of competency.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the management and supervision of aviation maintenance teams and the performance of maintenance quality inspections. Applications include maintenance teams within the ADF and within contractor organisations maintaining ADF aircraft and items of aeronautical product.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan maintenance for teams	1.1. <i>Maintenance tasks</i> are identified and interpreted from available <i>maintenance data or schedule</i> in accordance with organisational procedures. 1.2. Workload is organised in order of priority taking into consideration all required maintenance tasks and specified timeframes. 1.3. <i>Required resources</i> are identified and obtained. Tools and support equipment are checked for serviceability and currency of calibration, where applicable.
2. Implement team maintenance activities	2.1. Maintenance tasks are allocated to team members after consideration of individual experience, qualifications and task authorisations. 2.2. Team members are clearly briefed on their responsibility and function in the team 2.3. Team members are correctly authorised to operate the required items of <i>ground support and test</i>

ELEMENT	PERFORMANCE CRITERIA
	<i>equipment.</i>
3. Provide guidance	3.1. Guidance is provided to team members appropriate to the complexity or criticality of the maintenance task and the experience level of the individual. 3.2. Guidance is provided in determining the cause of complex faults or faults not covered in maintenance manual fault diagnosis guides.
4. Monitor and certify maintenance quality	4.1. Activities are checked and personnel are guided to ensure that maintenance is performed and certified in accordance with the <i>applicable documentation, policies and procedures.</i> 4.2. Check inspections are performed on completed work or work stages and certified in accordance with <i>regulatory requirements</i>, policies and procedures.
5. Perform human resource management activities at the supervisor level	5.1. Human factors affecting job performance are identified and addressed. 5.2. The possibility of <i>maintenance errors</i> is minimised. 5.3. Sound teamwork is maintained through an awareness of contributing factors. 5.4. Sound employment relations are maintained.
6. Perform workplace training tasks	6.1. Deliver <i>on-job training.</i> 6.2. Complete the Supervisor's Verification portion of the Workplace History Sheets (Section 3) of the Log of Industrial Experience and Achievement. 6.3. Provide expert witness verification of competency for Workplace Assessors when required. 6.4. Provide opportunities for individuals to develop competencies.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication

REQUIRED SKILLS AND KNOWLEDGE

- written communication
- planning
- supervision
- inspection
- advanced troubleshooting
- man management
- on-job training delivery
- application of OH&S requirements in the workplace

Required knowledge

Look for evidence that confirms knowledge of:

- principles of supervision
- high level technical knowledge applicable to the job
- fault diagnosis techniques
- maintenance data and documentation
- regulations, policies and procedures relating to supervision and certification of maintenance
- human factors and guidelines
- equity, diversity and fraud
- Commonwealth and State OH&S legislation
- MSDS
- use of PPE
- confined space entry permits
- avoidance of maintenance errors
- National Aeroskills Training Package including relevant competency units and training pathways
- The Log of Industrial Experience and Achievement, responsibility for making entries and responsibility for the certification of entries
- the role of supervisors in assisting workplace competency assessors
- techniques for delivery of on-job training
- relevant industrial awards and/or workplace agreements, or conditions of service

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	A person who demonstrates competency in this unit must be able to supervise work teams performing aviation maintenance tasks and certify maintenance quality/independent inspections. Individuals will need to have been appointed as an MQI or Independent Inspector before being assessed for competency in this Unit.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, or a combination of both on and off the job. Where partial assessment occurs off the job an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working as a team leader. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Maintenance tasks	<i>Maintenance tasks include:</i> • scheduled maintenance • unscheduled maintenance • configuration changes • modification incorporation • repair • overhaul
Maintenance data or schedule	<i>Maintenance data or schedule includes any or all of:</i> • maintenance records • maintenance manuals • servicing schedules • computer maintenance data systems • service bulletins • special technical instructions • modification orders • repair instructions • observations and feedback from maintenance personnel and aircrew • internal work instructions or management directives
Required resources	<i>Required resources may include:</i> • personnel in required numbers with applicable experience, qualifications and task authorisation • spares • consumables • tools

RANGE STATEMENT	
	• special equipment • ground support equipment • personal protective equipment (PPE)
Ground support and test equipment	<i>Ground support and test equipment may include:</i> • power carts • hydraulic rigs • pneumatic rigs • stands and docking • component test stands
Guidance	<i>Guidance may encompass:</i> • damage assessment • assessment of repair cost effectiveness • assessment of replacement options
Applicable documentation, policies and procedures	<i>The applicable documentation, policies and procedures include:</i> • operating manuals • maintenance manuals • organisational policy manuals • quality manuals • safety manuals • Material Safety Data Sheets (MSDS) • procedures manuals • work instructions • defence instructions and standards • standing instructions
Regulatory requirements	<i>Regulatory requirements are found in:</i> • AAP 7001.053 Technical Airworthiness Maintenance Manual • Commonwealth and State OH&S legislation
Human factors affecting job performance	<i>Human factors affecting job performance may include:</i> • individual health and disability • social psychology • time pressure and workload • the physical work environment
Actions to minimise maintenance errors may include:	<i>Actions to minimise maintenance errors may include:</i>

RANGE STATEMENT	
	• varying the extent of supervision according to the nature of the task and work conditions • allowance for qualification and experience levels within the team • allowance for human error and "Murphy's Law" ('If something can go wrong, it will.')
Sound employment relations	<i>Sound employment relations include knowledge of:</i> • relevant sections of industrial awards • content of enterprise agreements • conditions of employment and service that that apply to the particular workplace
On-job training	<i>On-job training involves:</i> • the reinforcement of knowledge and skills gained in off-job training and guiding their application to specific on-job maintenance tasks.

Unit Sector(s)

Unit sector	ADF airworthiness regulatory environment

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units	

MEA141B Manage risk in aviation maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to manage risk in aviation maintenance organisations while complying with legislative and regulatory requirements.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the identification of risks and the management of risk. Applications include both management of the performance of maintenance and in the provision of maintenance or integrated logistic support (ILS).

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify the criteria for risk management	1.1. Risk management procedures are identified from the organisation's <i>risk management plan/maintenance organisation exposition</i> 1.2. Where a risk management plan does not exist <i>potential risks</i> are identified and documented 1.3. <i>Criteria for managing the identified risks</i> are determined in accordance with <i>standard risk management procedures</i> and documented as a risk management plan 1.4. The process for evaluation and review of the risk management plan is identified from the organisation's plan or an <i>evaluation methodology</i> is developed and included in the plan developed in accordance with criteria 1.3
2. Manage risk	2.1. Activities are monitored in accordance with the risk management plan 2.2. Performance deviations are identified and responses are initiated in accordance with the risk management plan 2.3. The effectiveness of risk responses are monitored and reported in accordance with risk management plan procedures
3. Evaluate risk management	3.1. Risk management outcomes are reviewed and analysed to assess the effectiveness of the risk

ELEMENT	PERFORMANCE CRITERIA
processes	management plan 3.2. Recommendations on variations to the plan are developed and processed in accordance with organisational policy and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of standards and procedures for assessing and evaluating risks
- development of risk treatment processes
- assessment of legal impact of risk occurrence
- evaluation of risk management plan operation
- oral communication
- written communication

Required knowledge

Look for evidence that confirms knowledge of:

- organisational policies and procedures for risk management
- Civil Aviation Safety Regulation (CASR) Part 145 Manual of Standards, in particular Acceptable Means of Compliance and Guidance Material
- maintenance error management programs
- Australian and New Zealand Standard AS/NZS 4360 Risk Management
- regulatory impact of risks
- contractual impact of risks
- cost-benefit analysis
- Commonwealth and state/territory occupational health and safety (OHS) and environment protection legislation
- evaluation techniques
- equity, fraud and ethics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to develop, apply and evaluate a risk management plan.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations.

The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

Method of assessment

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application

Application of this unit may relate to:

- scheduled or unscheduled maintenance activities
- individual or team-related activities

Risk management plans

Risk management plans may include:

- potential risks and their probability of occurrence and degree of severity
- treatment options in each case
- responsibility for implementing treatment options and required response times
- resources required for risk management
- plan implementation timeframe
- periodic review timetable
- internal reporting system
- review methodology

Potential risks

Potential risks may include:

- human factors, such as fatigue, illness and maintenance errors
- OHS issues resulting in injury or death
- regulatory and procedural violations, such as inappropriate use of minimum equipment lists and failure to observe type certification standards
- providing maintenance guidance to remotely-located aircrew or maintenance personnel
- maintenance difficulties, such as spares shortages and unexpected failures of systems or components
- support equipment failure
- environmental problems
- contractual issues

RANGE STATEMENT	
	• skill and experience shortfalls • maintenance cost escalation • natural events
Criteria for managing the identified risks	<i>Criteria for managing the identified risks may include:</i> • level and degree of acceptability of each identified risk • legal aspects, such as regulatory violations and contractual commitments • cost of managing specific risks versus the cost to the organisation if the risk eventuated • stakeholder perceptions and expectations
Standard risk management procedures	<i>Standard risk management procedures may be found in:</i> • organisational risk management policies • web sites dealing with risk management • Australian and New Zealand Standard AS/NZS 4360 Risk Management • CASR Part 145 Manual of Standards
Evaluation methodology	<i>Evaluation methodology may include:</i> • oversight of day-to-day operations • interviews with personnel in the organisation • physical inspections • incident reports • questionnaires • periodic review of risk treatment procedures and outcomes

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA142B Manage self in the aviation maintenance environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Diploma and Advanced Diploma training pathways. It covers the competencies required to perform work ethically and efficiently in complying with legislative and regulatory requirements while managing the maintenance of aircraft and aircraft systems.

Application of the Unit

Application of the unit	This unit requires application of competencies relating to self-management and skills/professional development relating to aviation management. Applications include all aspects of aircraft maintenance, aeronautical product maintenance and other related integrated logistic support activities.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage self	1.1. Responsibility for own workload is assessed, prioritised and accepted 1.2. Work is undertaken autonomously to complete tasks/roles in a timely manner and in accordance with organisational and/or legislative and regulatory standards 1.3. Independence and initiative are demonstrated in identifying and solving problems 1.4. Initiative is exercised in liaison with colleagues in identifying and analysing alternative approaches to managing workplace issues and problems 1.5. Own performance is evaluated and monitored and confidence is built in own capability, ideas and vision 1.6. Performance feedback from others is used to improve work performance 1.7. Organisational structure, career paths and eligibility criteria are identified 1.8. Awareness is maintained of the effects of fatigue, drugs and alcohol on performance
2. Work effectively with others	2.1. Effective communication is applied when dealing with others 2.2. Others are dealt with ethically and principles of

ELEMENT	PERFORMANCE CRITERIA
	diversity applied 2.3. Judgement and discretion are used as is appropriate to the situation 2.4. The trust and confidence of others is developed and maintained at all levels of the organisation 2.5. Others are mentored in specific areas of aviation maintenance and maintenance management and performance feedback is provided 2.6. Advantages, disadvantages and consequences of ideas are identified and considered 2.7. An awareness of the possibility of fraudulent behaviour is maintained
3. Comply with requirements	3.1. Applicable contractual, legislative, regulatory and organisational requirements are complied with 3.2. Work requirements are surveyed and quotes are provided 3.3. Organisation and customer needs are surveyed and assessed
4. Manage work priorities and resources	4.1. Competing demands to achieve objectives and meet requirements for deliverables are prioritised 4.2. Work plans, programs and budgets are prepared, monitored and reviewed 4.3. Resource use to achieve objectives is planned 4.4. The nature, extent and impact of any issues or changes relating to work priorities and resource allocation are identified
5. Facilitate and capitalise on change and innovation	5.1. Change is introduced by working closely with others 5.2. Opportunities for product and service enhancement and options for achieving the desired result are identified
6. Contribute to development of own skills and professional capability	6.1. Competency standards relevant to current employment and career path through managing own skills development are interpreted and applied 6.2. Problem solving skills are reviewed for further development 6.3. Own personal knowledge and skills are assessed and learning opportunities are accessed as required to fill gaps and enhance skills 6.4. New ideas and techniques are accepted and time and effort invested in learning new skills 6.5. Performance feedback is used to identify and

ELEMENT	PERFORMANCE CRITERIA
	develop ways to improve competence

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- oral communication
- written communication
- applying principles of equity and diversity
- managing own work performance
- managing and interfacing with others
- applying legislation, regulations and organisational policies and procedures relevant to role and workplace
- managing own professional development

Required knowledge

Look for evidence that confirms knowledge of:

- occupational health and safety (OHS) legislation at Commonwealth and state/territory levels
- human factors
- equal opportunity legislation
- privacy legislation
- freedom of information legislation
- equity guidelines
- diversity principles
- detection of fraud
- Australian Quality Training Framework (AQTF) and relevant Training Packages
- leadership principles
- management principles and techniques
- regulations, policies, instructions and guidelines relevant to the organisation and role
- problem solving principles
- constant improvement principles and procedures
- change management

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to demonstrate initiative and effectively manage their own workload and professional development while engaged in the management of aviation maintenance and/or related integrated logistic support activities.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Competency in this unit underpins competency in other aspects of the workplace role of employees with managerial responsibilities in aviation maintenance and related integrated logistic support activities. It may be appropriate to assess parts of this unit in conjunction with units relating to the performance of such aspects of the role.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not

EVIDENCE GUIDE	
	disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Tasks/roles	<i>Tasks/roles may include:</i> • self-directed application of knowledge and skills in performing tasks related to maintenance management and/or related integrated logistic support activities
Organisational and/or legislative and regulatory standards	<i>Organisational and/or legislative and regulatory standards may include:</i> • equal employment opportunity legislation • Commonwealth and state/territory OHS legislation • Civil Aviation Regulations (CARs) and Advisory Circulars (ACs) • Civil Aviation Safety Regulations (CASRs), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material • maintenance organisation expositions • continuing airworthiness management organisation expositions

RANGE STATEMENT	
	• procedures manuals • position descriptions • quality manuals • safety manuals • work instructions • relevant overseas regulations, such as Federal Aviation Regulations or Joint Aviation Regulations • AAP 7001.053 Technical Airworthiness Maintenance Manual • defence regulations and instructions • Australian air publications • standing instructions • maintenance management plans • duty statements
Communication	<i>Communication may be by way of:</i> • oral communication, including briefings and presentations • written communication, including email
Quotations	<i>Quotations may include any or all of:</i> • man-hours • time requirements • spares, materials and consumables • resources, such as facilities, support equipment and tooling • price

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA143B Develop and manage maintenance error management programs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the competencies required to develop and manage maintenance error management programs within the civil aviation maintenance environment, as required by the Civil Aviation Safety Authority (CASA).

Application of the Unit

Application of the unit	This unit requires application of competencies relating to the development and management of maintenance error management programs aimed at reducing human error rates within aviation maintenance organisations. Applications include all maintenance activities relating to aircraft and aeronautical product that are performed within the jurisdiction of CASA.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop a maintenance error management program	1.1. The aims and objectives of the maintenance error management program are clearly stated and the program is structured in accordance with <i>regulatory requirements</i> 1.2. The maintenance error management program encourages open and blame free (unless negligent) reporting of maintenance errors 1.3. Disciplinary boundaries are clearly stated for application in the event of negligence 1.4. A maintenance error investigation procedure is specified, including compliance, where applicable, with <i>regulatory procedures for the reporting of significant safety issues</i> related to maintenance errors 1.5. A strategy and procedure is specified for the development and delivery of staff training programs relating to maintenance error management 1.6. Reference to the maintenance error management program is included in <i>applicable organisational policies and procedures</i> 1.7. Provision is made for feedback of program results to the workforce, and for analysis of accumulated data

ELEMENT	PERFORMANCE CRITERIA
	to identify maintenance error trends
2. Manage a maintenance error management program	2.1. Reported events are reviewed to determine if they should be investigated within the procedures of the maintenance error management program 2.2. Significant safety issues related to maintenance errors are reported to CASA and/or the Australian Transport Safety Bureau (ATSB) 2.3. Events applicable to the maintenance error management program are investigated in accordance with program procedures 2.4. The results of the investigation are analysed to determine appropriate action to minimise the probability of a recurrence of the event 2.5. Necessary action is taken and feedback is provided to the workforce 2.6. The event and resultant action are reviewed to determine what information, if any, should be forwarded to bodies external to the organisation 2.7. Accumulated data is reviewed in accordance with the program procedures to determine and monitor maintenance error trends

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- written and oral communication
- use of regulations and advisory material to set up a maintenance error management program
- specification of training requirements
- application of human factors
- trend analysis

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- relevant regulations and advisory material
- human factors
- investigative processes
- trend analysis
- how to specify training requirements
- equity, fraud and ethics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to develop and manage a maintenance error management program within an aviation maintenance organisation.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference

EVIDENCE GUIDE	
	materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance • individual or team-related activities
Regulatory requirements and associated guidelines	<i>Regulatory requirements and associated guidelines include:</i> • Civil Aviation Safety Regulations (CASR), Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material
Regulatory procedures for the reporting of significant safety issues	<i>Regulatory procedures for the reporting of significant safety issues include:</i> • Major Defect Report (MDR) • Service Difficulty Report (SDR) • Confidential Aviation Incident Report (CAIR)
Applicable organisational policies and procedures	<i>Applicable organisational policies and procedures may include:</i> • maintenance organisation expositions • quality manual • safety manual • procedures manual

RANGE STATEMENT

	• work instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance management

Co-requisite units

Co-requisite units		

MEA145A Conversion from allied trades for employment in aviation maintenance workshops

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is applicable to individuals with Certificate III or Certificate IV qualifications in allied trades (primarily automotive, electrotechnology or metals and engineering) who are to be employed in aviation maintenance workshops. It covers parts of common core competencies required of all individuals employed on the maintenance of items of aeronautical product that are aviation maintenance specific and would not have been covered in allied trade units that relate to similar areas of expertise.

Application of the Unit

Application of the unit	This unit requires application of common core skills and knowledge that are aviation maintenance specific and meet the requirements of the two Regulators, the Civil Aviation Safety Authority (CASA) and the Australian Defence Force. The skills and knowledge will be applied during the maintenance of items of aeronautical product in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and access aviation industry manuals, specifications and drawings	1.1. <i>Appropriate manuals</i> are identified and accessed for the type of aircraft or component to be maintained 1.2. Amendment status is clearly established to ensure the correct specifications and procedures are applied
2. Amend manuals, specifications or drawings	2.1. Manual, specification or drawing changes and/or amendments are incorporated and documented correctly in accordance with <i>statutory regulations and/or enterprise procedures</i>
3. Store manuals, specifications or drawings	3.1. Manuals, specifications or drawings are stored appropriately to ensure prevention of damage, ready access and updating of information, when required, in accordance with regulatory and/or enterprise procedures
4. Apply standard trade	4.1. Common types of aircraft attachment hardware are

ELEMENT	PERFORMANCE CRITERIA
practices	correctly selected and used 4.2. Common types of safety locking devices and fasteners are correctly selected and used 4.3. Aircraft components, devices and hardware are lockwired in the correct manner, using the appropriate wire gauge 4.4. Common types of aircraft connectors and plumbing are accurately assembled or connected
5. Interpret and apply quality standards in the aviation maintenance environment	5.1. Standards or specifications set out in maintenance documents and process specifications are identified and interpreted 5.2. Enterprise quality requirements are identified, confirmed and applied
6. Plan steps and organise work to complete task	6.1. Steps are planned in conjunction with the work of other personnel to allow achievement of practical outcomes, in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 6.2. Human factors are allowed for in planning of steps 6.3. Work activity is organised with other involved personnel, allowing for relevant human factors and using relevant communication processes to ensure safe and appropriate sequencing of tasks 6.4. All necessary documentation related to job planning and progress is completed, and recorded in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- accessing, interpreting and applying information from industry manuals, including paper-based, microfiche or computer-based media, relating to work activities, including determination of manual amendment status, knowledge of manual

REQUIRED SKILLS AND KNOWLEDGE

- structures and locating relevant information/instructions for work activity
- amending industry manuals to reflect current/approved amendment status
- identifying and interpreting information from drawings and diagrams in aircraft maintenance manuals, including component scaling, section, assembly, location, drawing applicability and amendment status from the title block
- correct handling and storage of drawings, manuals and industry media, i.e. microfiche and digital formats
- determining correct lubricants for specified applications
- identifying common ferrous and non-ferrous aircraft materials
- identifying common aircraft composite and non-metallic materials (other than wood)
- identifying aircraft hardware by markings, part numbers, size, shape and material
- installing aircraft hardware using standard practices/techniques to ensure safe security and includes:
 - minimum thread engagement
 - split pinning
 - lockwiring
 - application of locking compounds
 - locking tabs and spring washers
 - lock nuts
- installing aircraft hardware using tightening, torquing and tensioning techniques
- identifying various types of aircraft rigid and flexible plumbing and their connectors
- identifying aircraft control cables and related cable system hardware
- applying workplace hazard reporting and identification procedures
- being able to differentiate the elements which constitute the quality system and the ability to identify processes, workplace regulations and ISO 9000 compliant documentation and specifications within the workplace environment
- interpreting information relating to the work activity from a range of industry manuals, industry and enterprise regulations and industry documentation
- considering occupational health and safety (OHS) regulations/precautions specific to the work activity and others working in the vicinity of the planned work activity, particularly with regard to electricity, gases (especially oxygen), oils and chemicals
- using material safety data sheets (MSDS)
- applying human factors in planning maintenance activities

Required knowledge

Look for evidence that confirms knowledge of:

- the types of industry manuals used in aviation maintenance and types of media
- requirements for custody and upkeep of industry manuals
- techniques for obtaining and applying data contained in industry manuals

REQUIRED SKILLS AND KNOWLEDGE

- types of standard aircraft hardware and methods of identification, including bolts, nuts, washers, pins (cotter and tapered), and fasteners (rivets and camlocs)
- materials from which hardware is manufactured and its applications, including plain, corrosion resistant and temperature/heat resistant
- types of safety locking devices and their application
- common ferrous and non-ferrous aircraft materials, heat treatment and testing
- characteristics and properties of common composite and non-metallic materials (other than wood)
- types of aircraft cable, turnbuckles, end fittings, tensiometers, pulleys and cable system components, and aircraft flexible control systems
- types and characteristics of lubricants
- typical quality systems and their operation in the workplace
- workplace quality documentation, such as quality manuals, procedures manuals, work instructions and worksheets
- the relationship between the quality system and OHS requirements, such as workplace hazard reporting
- the relationship between the quality system and identification systems for aircraft hardware, materials and components
- the impact of human factors on the safe and effective performance of maintenance on aircraft and aircraft components
- MSDS

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to correctly apply common core skills and knowledge covered by this unit that are specific to the maintenance of items of aeronautical product in aviation maintenance workshops.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

This unit must be linked in its assessment and application to those units that apply to actual maintenance of items of aeronautical product. It is essential that all OHS requirements are met and understood.

The transferability of general manual interpretation and use in accordance with relevant aircraft component

EVIDENCE GUIDE

	publications/maintenance regulations/orders and standards and practices must be clearly established. Evidence of underlying knowledge and skills associated with the interpretation and use of manuals is required to supplement understanding of the structure and regulatory requirements associated with the aircraft maintenance environment in this area. Evidence of knowledge about how aircraft materials, standard items of hardware and fittings are used in component maintenance and the application of quality systems and work planning must be demonstrated. The ability to apply the skills and knowledge across a variety of applications must also be demonstrated. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one manual from each of Groups 1, 2 and 3 listed in the Range Statement and on the tasks listed in Groups 4 to 7. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or by use of simulated activities, covering the use of publications/maintenance regulations/orders and standards and practices, the application of aviation maintenance specific standard trade practices and of task planning and quality system application in the aeronautical product maintenance environment. This unit must be linked in its assessment and application to those that apply to the actual maintenance of items of aeronautical product.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Appropriate manuals	<i>Appropriate manuals may include:</i> 1. Aircraft publications, maintenance instruction manuals, process specifications, servicing or service bulletins or structural repair manuals 2. Tooling or equipment manuals, manufacturer's manuals, standard practices, enterprise aviation regulations and publications 3. Illustrated parts catalogues, aircraft wiring manuals or drawings
Application of standard aviation trade practices	Application of standard aviation trade practices applies to the selection and use of hand and power tools and equipment associated with workshop-related activities in the aircraft maintenance environment that involve: 4. Laying out and fabricating simple items from common aircraft materials 5. Assembling items using a representative range of common types of aircraft attachment hardware for which relevant fits and clearances, appropriate safety locking devices and fasteners, including lockwire, are correctly selected and applied 6. Assembling/connecting a range of common aircraft connectors and plumbing, applying safety locking devices where applicable 7. Assembling/connecting aircraft control cables and applying safety locking devices where applicable
Regulatory and enterprise	<i>Regulatory and enterprise procedures may be</i>

RANGE STATEMENT

procedures	<i>found in:</i> • civil aviation regulations or civil aviation safety regulations • maintenance organisation manual • procedures manuals • work instructions • quality manuals • safety manuals • applicable defence regulations and instructions • standing instructions
Human factors	<i>Human factors are:</i> • the factors relating to human behaviour and performance in aviation maintenance environments that are defined by either CASA or the Australian Defence Force
Documentation	<i>Documentation may include:</i> • maintenance logs, overhaul test/check sheets, job history sheets, traveller cards, maintenance reports, irregularity reports, serviceable tags or removal tags • MSDS or material record sheets

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		
	<i>MEA108B</i>	<i>Complete aviation maintenance industry documentation</i>

MEA201B Remove and install miscellaneous aircraft electrical hardware/components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all Avionic Certificate IV training pathways and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required for the removal and installation of miscellaneous electrical hardware and components found in various systems of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of skills in basic soldering and in crimping associated with the removal and installation of electrical hardware. Applications include miscellaneous electrical hardware fitted to fixed or rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove aircraft electrical hardware	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure

ELEMENT	PERFORMANCE CRITERIA
	personnel safety. 1.2. Removal of electrical hardware is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged, packaged or discarded in accordance with specified procedures.
2. Install aircraft electrical hardware	2.1. Electrical hardware components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 2.2. Physical installation of electrical hardware is carried out in accordance with the applicable maintenance manual. 2.3. System is reinstated to correct physical condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- The preparation and termination of electrical cables to aircraft industry standards, using crimping techniques, soldering techniques and solder sleeves joints
- The correct interpretation of aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- Inspection of electrical looms and harness pre and post removal and installation to ensure minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards
- Positive identification of miscellaneous electrical hardware and/or components in all aircraft systems

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware and plugs
- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to miscellaneous aircraft electrical hardware and components
- Electrical wiring used in aircraft and wire marking
- Plug/socket pin numbering and terminal block identification
- Cable and loom installation requirements
- Crimping tools and crimp terminals
- Soldering techniques and the use of solder sleeve joints
- Electrical fundamentals and related mathematical and physics principles

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use specialist tools and use maintenance publications to remove and install miscellaneous items of aircraft electrical hardware/components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that applicable cleanliness requirements and OH&S safety precautions are fully observed, including awareness of electrostatic discharge procedures.

Evidence of transferability of skills and knowledge related to removal and installation is essential. An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and

EVIDENCE GUIDE	
	regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on each of the connection methods 1, 2 and 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hardware connection methods	<i>Removal and installation of electrical hardware involves one or more of the following connection methods:</i> 1. Bolted

RANGE STATEMENT	
	2. Soldered 3. Plug connectors.
Types of electrical hardware	<i>Electrical hardware includes:</i> Switches, relays, lamps, terminal blocks, current limiters, circuit breakers, fuses, sockets, potentiometers, capacitors, inductors, magnetic amplifiers, transformers, rheostats, resistors and diodes, miscellaneous sensors and minor components hard mounted throughout the aircraft, busbars, lugs, ferrules, splices, connectors and electrical, electronic cables and looms
Basic soldering and crimping	The work will include the application of basic soldering and crimping skills associated with removal and installation of electrical hardware.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA202C Remove and install basic aircraft electrical system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the removal and installation of electrical system components in fixed and rotary wing aircraft types that have only DC electrical systems. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of aircraft DC electrical system components. Applications include fixed and rotary wing aircraft that have only DC electrical systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove DC aircraft electrical system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Electrical component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install DC aircraft electrical system	2.1. Electrical components to be installed are checked to confirm correct part numbers, modification status,

ELEMENT	PERFORMANCE CRITERIA
components	serviceability and shelf life. 2.2. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Identifying/locating:
 - DC power generation, regulation, distribution and control systems and components, ie regulators and bus bars
 - piston engine ignition systems and components, ie coils, magnetos, auxiliary starting devices (impulse couplings and inductors/vibrators)
 - gas turbine engine igniter and starting system components (where applicable to enterprise)
 - batteries (lead acid and nickel cadmium) and associated mounting equipment including related anti-vibration aids
 - motors and actuators in basic DC electrical systems
 - specific components of DC electrical systems such as flaps and landing gear.
- Correctly connecting DC generators and alternator/rectifier generators.
- Applying relevant OHS practices

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware and plugs
- Relevant OHS practices

REQUIRED SKILLS AND KNOWLEDGE

- The use of approved maintenance documentation and aircraft publications relating to DC electrical systems
- Properties of permanent magnets
- Precautions for the care and storage of permanent magnets
- General construction, operating characteristics and applications for:
 - aircraft DC generators
 - alternator/rectifier DC generators
 - DC starter/generators
 - DC motors including starter motors
 - DC rotary and linear actuators
 - batteries
- How to locate and identify components of:
 - DC power regulation and distribution systems
 - piston engine ignition and starting systems
 - gas turbine engine igniter systems including specific OHS precautions
 - gas turbine engine starting systems
 - DC electrical systems such as flaps and landing gear retraction
 - Lighting systems
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install components of DC electrical systems while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.

Evidence of transferability of skills and knowledge

EVIDENCE GUIDE	
	related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft major electrical system components encompassing electrical with mechanical interface, installations which require alignment and/or adjustment, mechanical or electrical. An understanding of the attachment methods, connection of hardware, and the need for adjustment or rigging and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one component from each of groups 1 to 8 in the Range Statement (group 8 may be omitted when not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical systems and components	<i>Electrical components include:</i> 1 DC generators, and alternator/rectifier generators, and components of related single generator regulation and distribution systems 2. Motors 3. Actuators 4. Piston engine ignition and starting system components 5. Aircraft batteries 6. Specific components of DC electrical systems such as flaps, landing gear 7. Aircraft lighting 8. Gas turbine engine igniter and starting systems
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA203C Remove and install advanced aircraft electrical system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway, and of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required for the removal and installation of electrical system components of the more advanced types of both fixed and rotary wing aircraft that have both AC and DC electrical systems. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of advanced aircraft electrical AC and DC system components. Applications include fixed and rotary wing aircraft that have both AC and DC electrical systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove AC and DC aircraft electrical system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Electrical component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install AC and DC	2.1. Electrical components to be installed are checked to

ELEMENT	PERFORMANCE CRITERIA
aircraft electrical system components.	confirm correct part numbers, modification status, serviceability and shelf life. 2.2. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Identifying/locating:
 - DC power regulation, distribution and control systems and components, ie regulators and bus bars
 - AC power regulation, distribution and control systems and components, ie generator control units
 - various types of inverters and transformer rectifier units
 - gas turbine and piston engine ignition and starting systems and components
 - batteries (lead acid and nickel cadmium) and associated mounting equipment including related anti-vibration aids and battery temperature monitoring systems
 - flight control servo actuating devices, ie AC and DC electro-mechanical, electro-pneumatic, electro-hydraulic, duplex servomotors, power control units and trim control devices
 - electrical components of aircraft systems such as air cycle air conditioning, anti-icing and de-icing, landing gear, anti-skid, flight control, master and central warning, fuel storage and distribution, external and internal lighting, fire warning and extinguishing and engine/propeller control.
- Correctly connecting:
 - DC generators

REQUIRED SKILLS AND KNOWLEDGE

- star or delta alternators to star and delta loads
- starter generators
- AC motors
- polyphase motors
- Applying relevant occupational health and safety (OHS) practices

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware and plugs
- Relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to AC and DC electrical systems
- Properties of permanent magnets
- Precautions for the care and storage of permanent magnets
- Bonding of aircraft components and lightning protection
- General construction, operating characteristics and applications for aircraft:
 - Generators
 - Alternators
 - AC and DC motors
 - transformer rectifier units
 - rotary and static inverters
 - batteries
 - linear and rotary actuators
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install components of advanced DC and AC electrical systems while observing all relevant safety precautions.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft major electrical system components encompassing electrical with mechanical interface, installations that require alignment and/or adjustment, mechanical or electrical. An understanding of the attachment methods, connection of hardware, and the need for adjustment or rigging and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor, that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one component from each of Groups 1 to 6 and on three components from Group 7, as listed in the Range Statement. This shall be established via records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical system components	<i>Electrical components include:</i> 1. DC and AC power generation and distribution system components, including generators and related multi-sourced DC power generation, starter generators alternators and regulation, control and distribution system components 2. Transformer rectifier units and/or inverters 3. Batteries and related bus tie or interlock system components and battery temperature monitoring systems 4. Motors and actuators 5. Components of gas turbine and/or piston engine ignition and starting systems (depending on enterprise requirements) 6. External/internal lights 7. Electrical components of specific electrical systems such as air cycle air conditioning, combustion heaters, equipment cooling, anti-icing and de-icing, landing gear, anti-skid, flight control, master and central warning, fuel storage and distribution, fire warning and extinguishing and engine/propeller control.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by

RANGE STATEMENT

	manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA204C Remove and install basic aircraft instrument system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the removal and installation of aircraft instrument system components in the types of both fixed and rotary wing aircraft that have only basic instrument systems. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of basic aircraft instrument system components. Applications include fixed and rotary wing aircraft with basic instrument systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove basic aircraft instrument system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. <i>Instrument component</i> removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install basic aircraft instrument system	2.1. Instrument components to be installed are checked to confirm correct part numbers, modification status,

ELEMENT	PERFORMANCE CRITERIA
components.	serviceability and shelf life. 2.2. Physical installation of instrument components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Locating and identifying flight instrument system components comprising:
 - engine system temperature, pressure, speed (including mechanical and electrical tachometers), manifold pressure/boost (including aneroid type, sylphon bellows and dual compartment type)
 - auxiliary direct reading systems including hydraulic pressure, pneumatic pressure and vacuum, fuel storage quantities
 - flight systems including attitude, altitude, air speed, outside air temperature (OAT)
- Locating and identifying direct reading compasses.
- Correct handling and observance of maintenance precautions relating to gyroscopes, gimbals, pitot/static systems (connections, heating and protrusions)
- Applying relevant occupational health and safety (OHS) practices

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware and plugs
- Handling precautions relating to:
 - electrostatic sensitive devices

REQUIRED SKILLS AND KNOWLEDGE

- gyroscopes and gimbals
- Basic instrument system and component operating principles:
 - atmospheric and barometry
 - terminology and unit of measurement conversion
 - aircraft instrumentation requirements
 - instrument panel layout
 - pressure sensing elements
 - pitot static systems and testing requirements
 - gyroscopic principles
 - direct reading compasses
 - temperature sensors
 - fluid quantity indication systems
- General layout and components of the following systems:
 - flight systems including:
 - altitude (direct reading altimeters)
 - attitude including directional gyros and artificial horizons (both air and electrically driven), turn and slip and turn co-ordinator
 - airspeed
 - OAT
 - engine indication systems including:
 - direct reading temperature
 - direct reading pressure (e.g. oil pressure)
 - speed including mechanical and electric tachometers
 - manifold pressure/boost including aneroid, sylphon bellows and dual compartment types
 - auxiliary direct reading systems including:
 - electrical
 - hydraulic pressure
 - pneumatic pressure and vacuum
 - basic fuel quantity indication
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to remove and install the components of aircraft basic instrument systems while observing all relevant safety and component handling precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft instrument system components as listed in the Range Statement. An understanding of the attachment methods, connection of hardware, and the need for adjustment or calibration and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one component from each of Groups 1 to 8 as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for	

EVIDENCE GUIDE**assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Instrument components

Instrument components include:

1. Pitot/static system components, Airspeed Indicators (ASIs), Vertical Speed Indicators (VSIs) and counter pointer altimeters
2. Directional Gyros (DGs) and Artificial Horizons (AHs), both air and electrically driven
3. Turn and bank and slip/turn coordinators
4. Direct reading compasses
5. Piston engine indication system components (direct reading measuring instruments and temperature indication)
6. Electrical systems indication (voltage, current, power and frequency)
7. Basic fuel quantity indication system components
8. Pneumatic/vacuum indication system components.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

RANGE STATEMENT**Procedures and requirements**

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA205C Remove and install advanced aircraft instrument system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the removal and installation of general instrument system components in the more advanced types of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of components of advanced instrument systems. Applications include fixed and rotary wing aircraft that have advanced instrument systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove advanced aircraft instrument system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. <i>Instrument component</i> removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install advanced aircraft instrument	2.1. Instrument components to be installed are checked to confirm correct part numbers, modification status,

ELEMENT	PERFORMANCE CRITERIA
system components.	serviceability and shelf life. 2.2. Physical installation of instrument components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Locating and identifying flight instrument system components comprising:
 - engine system temperature, pressure (including thermocouples, sensor units and transmitters), speed (including mechanical and electrical tachometers), thrust (fan, propeller, jet), torque, fuel flow and vibration
 - auxiliary systems including hydraulic pressure and temperature, transmission pressure and temperature, fuel storage quantities, fuel remaining/used, component position, ie flaps, landing gear, speed brakes, door/pylon locking
 - flight systems including attitude, altitude, air speed, outside air temperature (OAT), ground proximity warning system (GPWS)
- Locating and identifying direct reading compasses, remote compass system components (flux valve, gyro, amplifier and indicator), and attitude heading reference system (AHRS) components
- Locating and identifying flight data recorder (FDR) system components
- Correct handling procedures and maintenance precautions relating to gyroscopes, gimbals, pitot/static systems (connections, heating and protrusions)
- Applying relevant occupational health and safety (OHS) practices

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- Component attachment methods
- Connection of hardware and plugs
- Handling precautions for electrostatic sensitive devices
- Relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to basic and advance instrument systems
- Basic instrument system and component operating principles:
 - atmospheric and barometry
 - terminology and unit of measurement conversion
 - aircraft instrumentation requirements
 - instrument panel layout
 - pressure sensing elements
 - pitot static systems and testing requirements
 - gyroscopic principles
 - direct reading compasses
 - temperature sensors
 - fluid quantity indication systems
- General layout and components of the following systems:
 - flight systems including:
 - altitude (direct reading, servo and encoding altimeters)
 - attitude including directional gyros (DG) and artificial horizons (AH) (both air and electrically driven) and turn and slip, AHRS
 - airspeed including air speed indicators (ASI), machmeters, air data systems
 - vertical speed indicators (VSI)
 - angle of attack and stall warning/avoidance
 - OAT
 - GPWS
 - engine indication systems including:
 - temperature and pressure (including thermocouples, sensors and transmitters)
 - speed including mechanical and electric tachometers
 - thrust including fan, propeller and jet
 - torque
 - fuel flow
 - vibration
 - auxiliary transmitter/indicator measuring systems including:
 - hydraulic pressure and temperature
 - pneumatic pressure
 - transmission oil pressure and temperature

REQUIRED SKILLS AND KNOWLEDGE

- fuel remaining/used
- fuel quantity indication
- component position
- remote compass systems
- FDR systems
- Applying relevant OHS practices

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install the components of aircraft basic and advanced instrument systems while observing all relevant safety and component handling precautions

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft instrument system components as listed in the Range Statement. An understanding of the attachment methods, connection of hardware, and the need for adjustment or calibration and system operation as they relate to the work must be demonstrated before undertaking any action.

The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one component from each of Groups 1 to 7 (Groups 6 and 7 may be omitted where not

EVIDENCE GUIDE	
	applicable to the enterprise) in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Instrument components	<i>Instrument components may be:</i> 1. Pitot/static system components, ASIs, VSIs, air data system components, machmeters, altimeters including servo and encoding altimeters, angle of attack and stall warning/avoidance systems 2. Turn and slip, DGs, AHs, AHRS components (where applicable to enterprise), remote reading gyro compass system components and direct reading compasses

RANGE STATEMENT	
	3. Turbine engine indication systems 4. Transmitter/indicator measuring instrument systems (pressure, temperature, position) 5. Fuel quantity indication and flow systems components 6. GPWS 7. FDR.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA206C Remove and install aircraft basic radio communication and navigation system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the removal and installation of basic communication and navigation system components of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of basic radio communication and navigation system components. Applications include fixed and rotary wing aircraft that are fitted with basic radio communication and navigation system components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical

Prerequisite units		
		hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove basic radio communication and navigation system components	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. <i>Communication and navigation system component</i> removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install basic radio communication and navigation system components.	2.1. Communication and navigation system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life.

ELEMENT	PERFORMANCE CRITERIA
	2.2. Physical installation of components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Locating and identifying radio communication and navigation system components comprising:
 - High Frequency (HF) and Very High Frequency (VHF) communications
 - Very High Frequency Omni-Directional Range (VOR) and Automatic Direction Finding (ADF) navigation systems
 - Emergency Location Transmitter (ELT) systems
- Locating and identifying applicable radio system antennas
- Removing and installing communication and navigation system components including antennas
- Applying relevant OHS practices

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware, and plugs
- Handling precautions for electrostatic sensitive devices
- Relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to radio communication and navigation systems and components
- Basic layout and working principles to block diagram level of:
 - HF communication systems

REQUIRED SKILLS AND KNOWLEDGE

- VHF communication systems
- ADF navigation systems
- VOR navigation systems
- ELT systems
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install the components of aircraft basic communication and navigation systems while observing all relevant safety and component handling precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of radio communication and navigation system components as listed in the Range Statement.

An understanding of the attachment methods, connection of hardware, and the need for adjustment or calibration and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to

EVIDENCE GUIDE	
	3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Communication and navigation system components	<i>Communication and navigation system components may include:</i> 1. HF and VHF communication and applicable antennas 2. ADF and VOR navigation and applicable antennas 3. ELT
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance

RANGE STATEMENT	
	activities Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA207C Remove and install aircraft electronic system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the removal and installation of electronic system components of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of electronic system components and Line Replaceable Units. Applications include fixed and rotary wing aircraft that are fitted with electronic systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove aircraft electronic system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Electronic system component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Install aircraft electronic system	2.1. Electronic system components to be installed are checked to confirm correct part numbers,

ELEMENT	PERFORMANCE CRITERIA
components.	modification status, serviceability and shelf life. 2.2. Physical installation of electronic components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Locating and identifying electronic navigational system components including altitude reporting systems (transponder, encoder and control unit), remote attitude displays and Inertial Navigation and Reference Systems.
- Locating and identifying multi function displays including Electronic Flight Instrument Display (EFIS), Engine Indication and Crew Alert System (EICAS), Electronic Centralised Aircraft Monitor (ECAM), Flight Management Computer System (FMCS), Head Up Display (HUD)
- Locating and identifying radio communication and navigation system components comprising UHF, SATCOM communications, DME, ILS, GNS radio navigation, Traffic Collision Avoidance System (TCAS), RADALT, radio system antennas including half dipole, slotted, loop, marconi
- Locating and identifying primary and secondary radar system components including transmission lines, waveguide and antennas
- Locating and identifying cockpit voice recorder system components, internal communications, passenger/cockpit audio/visual components
- Application of relevant OHS practices

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods

REQUIRED SKILLS AND KNOWLEDGE

- Connection of components and plugs
- Printed circuit boards
- Panel and rack mounting systems for electronic system components and Line Replaceable Units (LRUs)
- Relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to the avionics systems and components being maintained
- Handling and maintenance precautions relating to gyroscopes, gimbals, electronic displays, airborne radar systems (including pressurised waveguides), electrostatic sensitive devices, radio installations
- Electromagnetic environment
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install aircraft electronic system components/ LRUs while observing all relevant safety and component handling precautions

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of electronic system components as listed in the Range Statement. An understanding of the attachment methods, connection of hardware, and the need for adjustment or calibration and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

EVIDENCE GUIDE	
	A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on sufficient components/LRUs of systems in Groups 1 to 9 to establish competency (Groups 6 to 9 may be omitted where they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electronic system components	<i>Electronic system components include panel and rack mounted electronic system components and LRUs of:</i> 1. Instrument navigation systems

RANGE STATEMENT	
	2. Communication systems 3. Radio navigation systems 4. Pulse operated systems 5. Antennas 6. Electronic instrument displays 7. Automatic flight control systems. 8. Cabin entertainment equipment 9. On-board maintenance systems
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA208C Remove and install aircraft pressurisation control system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required for the removal and installation of pressurisation control system components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence or licence extension under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of pressurisation control system components. Applications include fixed wing aircraft that have pressurisation systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove pressurisation control system components	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Pressurisation control system component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures

ELEMENT	PERFORMANCE CRITERIA
2. Install aircraft pressurisation control system components	2.1. Pressurisation control system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 2.2. Physical installation of pressurisation control components is performed in accordance with the applicable maintenance manual. 2.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to the pressurisation control system and components being maintained
- locating and identifying the components of pressurisation control systems

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of components and plugs
- Relevant OHS practices
- The layout and operation to block diagram level of mechanical and electronic pressurisation control systems
- Handling precautions relating to electrostatic sensitive devices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to remove and install the components of aircraft pressurisation control systems while observing all relevant safety and component handling precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Evidence of transferability of skills and knowledge related to removal and installation is essential. An understanding of the attachment methods, connection of hardware, and the need for confirming correct system operation must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of pressurisation control system components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA209C Remove and install aircraft oxygen system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required for the removal and installation of oxygen system components of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of aircraft oxygen system components. Applications include fixed or rotary wing aircraft that have oxygen systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove oxygen system components.	1.1. Oxygen system is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to

ELEMENT	PERFORMANCE CRITERIA
	ensure personnel safety. 1.2. Removal of oxygen system components is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged, packaged or discarded in accordance with specified procedures.
2. Install aircraft oxygen system components.	2.1. Oxygen system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 2.2. Oxygen system components to be installed are free from contamination and inspected for damaged flair ends and fittings. 2.3. Component installation is physically carried out in accordance with the applicable maintenance manual. 2.4. System is reinstated to correct physical condition in preparation for testing, as necessary. 2.5. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of appropriate OHS practices and the use of approved maintenance documentation and aircraft publications relating to aircraft oxygen systems and components
- Demonstrating the procedure to replenish a dry breathing oxygen system, including:
 - correct identification of oxygen ground trolleys
 - maximum charging pressures for low and high pressure systems
 - safety precautions to be adhered to during replenishment

REQUIRED SKILLS AND KNOWLEDGE

- correct order of procedural replenishment steps.
- Demonstrating the procedure to purge a dry breathing oxygen system, including:
 - reasons for the requirement to undertake a purging operation
 - identification of acceptable system purging gases
 - safety precautions to be adhered to during purging
- Correct techniques to be employed when purging oxygen storage cylinders or systems.

Required knowledge

Look for evidence that confirms knowledge of:

- OHS practices relevant to oxygen system maintenance
- Component attachment methods
- Connection of hardware and couplings
- Oxygen system isolation
- The properties of aircraft oxygen and requirements for aircrew/passengers.
- The layout of low and high-pressure dry breathing oxygen systems and components
- The methods by which gaseous dry breathing oxygen is stored in both the aircraft and within the workplace environment. Reference to storage trolleys, aircraft cylinders and chemical oxygen cylinders is required
- The methods used to locate, identify and access oxygen system components for removal and installation
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install the components of aircraft oxygen systems while observing all relevant safety and component handling precautions.

Critical aspects for assessment and evidence required to demonstrate

It is essential that oxygen system cleanliness requirements and safety precautions applicable to system

EVIDENCE GUIDE	
competency in this unit	component handling are fully observed, understood and complied with. These cleanliness requirements extend to all tooling and hardware associated with oxygen system maintenance. Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft oxygen system components listed in the Range Statement. An understanding of the attachment methods, connection hardware, and the need for adjustment or rigging and system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 and 2 (Groups 3 and 4 may be omitted where they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is expected that dedicated tools, test and ground support equipment is used in routine oxygen situations
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

RANGE STATEMENT	
wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Oxygen system components	<i>Oxygen system components may include:</i> 1. Oxygen pressure cylinders, valves, gauges 2. Regulators, masks (including other integrated systems), pipes, hoses and fittings 3. Chemical generators 4. Liquid Dry Breathing Oxygen (LDBO) converters
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA210C Inspect, test and troubleshoot basic aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot DC electrical systems and components fitted to types of fixed and rotary wing aircraft that have only DC electrical systems. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable test equipment to inspect, test and troubleshoot DC aircraft electrical systems and components. Applications include fixed and rotary wing aircraft that have only DC electrical systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA202C	Remove and install basic aircraft electrical system components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect DC aircraft electrical systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. DC electrical system is visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust DC aircraft electrical systems	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Electrical system is functionally tested, in accordance with maintenance manual, for evidence

ELEMENT	PERFORMANCE CRITERIA
	of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot DC aircraft electrical systems.	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required and in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - DC power generation systems including regulation, distribution and control
 - battery installations
 - piston engine ignition and starting systems and components:
 - magnetos or coils
 - starter motors
 - ignition switches/start switches
 - ignition harnesses
 - low tension wiring
 - spark plugs

REQUIRED SKILLS AND KNOWLEDGE

- auxiliary starting devices
- gas turbine engine ignition and starting systems:
 - starter motors and starter/generators
 - high energy ignition units
 - control units
 - switches
- batteries and associated mounting equipment including related anti-vibration aids
- motors and actuators in DC electrical systems
- internal/external lighting systems, including controls
- flap systems
- landing gear systems
- Applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions in the above systems
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability
- Application of relevant OHS practices, including those relating to gas turbine engine high energy ignition units

Required knowledge

Look for evidence that confirms knowledge of:

- DC circuit theory
- Electrical system maintenance requirements and troubleshooting procedures
- The basic layout (block diagram level), function and operation of:
 - Single generator DC power generation and distribution systems and components including
 - DC generators
 - alternator/rectifier generators
 - starter/generators
 - voltage regulators
 - circuit protection devices
 - bus bars
 - piston engine ignition and starting systems and components including:
 - magnetos or coils
 - starter motors
 - ignition switches/start switches
 - ignition harnesses
 - low tension wiring

REQUIRED SKILLS AND KNOWLEDGE

- spark plugs
- auxiliary starting devices
- gas turbine igniter and starting systems and components including specific OHS precautions:
 - starter motors and starter/generators
 - high energy ignition units
 - control units
 - switches
- landing gear and flap systems and components including:
 - motors
 - actuators
 - selector switches
 - micro switches
- internal and external lighting systems and components
- batteries and associated mounting equipment including related anti-vibration aids
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic DC electrical systems and components, including looms, cables and connection hardware, while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft electrical systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the

EVIDENCE GUIDE	
	system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of aircraft electrical systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on electrical looms, cables and connection hardware, and on each system in Range Statement Groups 1 to 5 (group 4 may be omitted if not applicable to the enterprise) and on at least one major component/LRU in each case. For Group 6, competency may be demonstrated through the performance of a battery check. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
DC electrical systems	<i>DC electrical systems may include:</i> 1. DC generators, and alternator/rectifier generators, and components of related single generator regulation and distribution systems 2. Piston engine ignition and starting system components 3. Specific components of DC electrical systems such as flaps and landing gear, including related motors and actuators 4. Gas turbine engine igniter and starting systems and components 5. Aircraft lighting 6. Aircraft main batteries
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA211C Inspect, test and troubleshoot advanced aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to inspect, test and troubleshoot electrical systems and components fitted to the more advanced types of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot advanced aircraft electrical systems and components. Applications include fixed and rotary wing aircraft that have advanced electrical systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA203C	Remove and install advanced aircraft electrical system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect advanced aircraft electrical systems and components	1.1.Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements. 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3.Electrical systems are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4.Defects are correctly identified and reported.
2. Test/adjust advanced aircraft electrical	2.1.Aircraft and system are prepared in accordance with applicable maintenance manual for the application

ELEMENT	PERFORMANCE CRITERIA
systems.	of power/system operation. 2.2. Electrical system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot advanced aircraft electrical systems	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - DC and AC power generation systems including regulation, distribution and control
 - inverters (rotary and static)
 - battery installations including temperature monitoring systems
 - gas turbine and piston engine ignition and starting systems
 - propeller systems
 - internal/external lighting systems, including controls

REQUIRED SKILLS AND KNOWLEDGE

- landing gear systems, including anti-skid
- flight controls
- fire warning and extinguishing
- air cycle air conditioning and combustion heating systems
- equipment cooling and ventilation
- fuel storage and distribution
- master and central warning
- Applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate electrical system malfunctions in the above systems
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability
- Applying OHS requirements applicable to the maintenance of aircraft electrical systems
- Use of approved maintenance documentation and aircraft publications relating to the electrical systems being maintained

Required knowledge

Look for evidence that confirms knowledge of:

- The basic layout (block diagram level), function and operation of the following systems:
- DC and AC power multi-generator systems including regulation, distribution and control
- inverters (rotary and static)
- battery installations including temperature monitoring systems
- gas turbine and piston engine ignition and starting systems
- propeller systems
- internal/external lighting systems, including controls
- landing gear systems, including anti-skid
- flight controls
- fire warning and extinguishing
- air cycle air conditioning and combustion heating systems
- equipment cooling and ventilation
- fuel storage and distribution
- master and central warning
- Explaining basic principles/functions, relating to the above systems and associated with:
 - basic DC and AC circuit theory
 - DC generator characteristics
 - alternator characteristics

REQUIRED SKILLS AND KNOWLEDGE

- starter generator characteristics
- DC and AC motors
- rotary and static inverter operation
- OHS requirements applicable to the maintenance of aircraft electrical systems, including gas turbine engine high energy ignition units
- Electrical system maintenance requirements and troubleshooting procedures
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot DC and AC electrical systems and components, including looms, cables and connection hardware, while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft electrical systems and components.

It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of aircraft electrical systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems

EVIDENCE GUIDE	
	(if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one item from each of Groups 1 to 7 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical systems and their components	<i>Electrical systems and their components include:</i> DC and AC power generation and

RANGE STATEMENT	
	distribution systems and components, including generators, alternators, starter generators and related control, regulation and distribution system components 2. Transformer rectifier units and inverters 3. Batteries and related bus tie or interlock system components and battery temperature monitoring systems 4. Motors and actuators 5. Components of gas turbine and/or piston engine ignition and starting systems (where applicable to the enterprise) 6. External/internal lights 7. Electrical components specific to systems such as air cycle air conditioning, combustion heating, equipment cooling, anti-icing and de-icing, landing gear, anti-skid, flight control, master and central warning, fuel storage and distribution, fire warning and extinguishing and engine/propeller control.
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA212C Inspect, test and troubleshoot basic aircraft instrument systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot instrument systems and components fitted to the more basic types of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable test equipment to inspect, test and troubleshoot basic aircraft instrument systems and components. Applications include fixed and rotary wing aircraft that have basic instrument systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA204C	Remove and install basic aircraft instrument system components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft basic instrument systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. Instrument system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported
2. Test/adjust aircraft basic instrument systems and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Instrument system is functionally tested in accordance with maintenance manual for evidence

ELEMENT	PERFORMANCE CRITERIA
	of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot aircraft basic instrument systems and components.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Instrument system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight instruments
 - pitot/static systems
 - direct reading compasses
 - piston engine indication systems
 - electrical systems indication
 - basic fuel quantity indication systems
 - pneumatic/vacuum indication systems.
- Applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals to isolate instrument

REQUIRED SKILLS AND KNOWLEDGE

- system malfunctions in the above systems
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability
- Application of OHS requirements relevant to instrument system maintenance

Required knowledge

Look for evidence that confirms knowledge of:

- The basic layout (block diagram level), function and operation of:
 - flight systems including:
 - altitude (direct reading altimeters)
 - attitude including directional gyros and artificial horizons (both air and electrically driven), turn and slip and turn co-ordinator
 - airspeed
 - OAT
 - engine indication systems including:
 - direct reading temperature
 - direct reading pressure (e.g. oil pressure)
 - speed including mechanical and electric tachometers
 - manifold pressure/boost including aneroid, sylphon bellows and dual compartment types
 - auxiliary direct reading systems including:
 - electrical
 - hydraulic pressure
 - pneumatic pressure and vacuum
 - basic fuel quantity indication
- Basic instrument system maintenance and testing requirements, and troubleshooting procedures
- OHS requirements relevant to instrument system maintenance
- The operating principles of the above systems and associated with:
 - atmospheric conditions; properties and effects on aircraft instruments and systems
 - pressure and temperature sensing elements and their use in aircraft instruments
 - gyroscopes and their use in aircraft instrument systems
 - electrical fundamentals
- Direct reading compass installations and calibration
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic instrument systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft basic instrument systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of basic aircraft instrument systems and components listed in the Range Statement.

The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 to 8 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Instrument systems and components	<i>Instrument systems and components include:</i> 1. Pitot/static systems and components, Airspeed Indicators (ASIs), Vertical Speed Indicators (VSIs) and counter-pointer altimeters 2. Directional Gyros (DGs) and Artificial Horizons (AHs) (air and electrically driven) Turn and bank and slip/turn coordinators 3. Direct reading compasses 4. Piston engine indication system components (direct reading measuring instruments and temperature indication) 5. Electrical systems indication (voltage, current, power and frequency) 6. Basic fuel quantity indication systems and

RANGE STATEMENT	
	components 7. Pneumatic/vacuum indication components
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA213C Inspect, test and troubleshoot advanced aircraft instrument systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot instrument systems and components fitted to the more advanced types of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot aircraft advanced instrument systems and components. Applications include fixed and rotary wing aircraft that have advanced instrument systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA205C	Remove and install advanced aircraft instrument system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft advanced instrument systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. Instrument system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust aircraft advanced instrument systems and	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application

ELEMENT	PERFORMANCE CRITERIA
components	of power/system operation. 2.2. Instrument system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot aircraft advanced instrument systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Instrument system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight instruments
 - pitot/static systems
 - navigation systems - compasses and Attitude And Heading Reference Systems (AHRS)
 - Ground Proximity Warning System (GPWS)
 - position indicators, engine/auxiliary system indication systems and system components

REQUIRED SKILLS AND KNOWLEDGE

- Applying logic processes, taking and interpreting system measurements, use test equipment and appropriate wiring diagrams and manuals to isolate instrument and display system malfunctions in the listed systems
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability
- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the instrument and display systems being maintained

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware
- Instrument system maintenance requirements and testing and troubleshooting procedures
- The basic layout (block diagram level), function and operation of:
 - flight instruments including:
 - Airspeed Indicators (ASIs)
 - Vertical Speed Indicators (VSIs)
 - air data systems and components
 - Machmeters
 - altimeters including servo and encoding altimeters
 - Turn and slip indicators
 - Artificial Horizons (AHs)
 - Directional Gyros (DGs)
 - angle of attack and stall warning/avoidance systems
 - pitot/static systems
 - navigation systems:
 - direct reading compasses
 - gyro compasses
 - AHRS
 - GPWS
 - Turbine engine instruments including:
 - temperature and pressure (including thermocouples, sensors and transmitters)
 - speed including mechanical and electric tachometers
 - thrust including fan, propeller and jet
 - torque
 - fuel flow

REQUIRED SKILLS AND KNOWLEDGE

- vibration
- auxiliary transmitter/indicator measuring systems including:
 - hydraulic pressure and temperature
 - pneumatic pressure
 - transmission oil pressure and temperature
 - fuel remaining/used
 - fuel quantity indication
 - component position (e.g. doors, flaps, speed brakes, landing gear)
- Flight Data Recorder (FDR) systems
- Explaining the operating principles of the above-listed systems and associated with:
 - atmospheric conditions; properties and effects on aircraft instruments and systems
 - pressure and temperature sensing elements and their use in aircraft instruments
 - gyroscopes and their use in aircraft instrument and reference systems
- Explaining the various methods of navigation, and describing how they are used by both aircraft conventional and electronic navigational instruments and systems
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot advanced instrument systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft advanced instrument systems and components. It is essential that system testing procedures, cleanliness requirements and safety

EVIDENCE GUIDE	
	precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of advanced aircraft instrument systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 to 7 (Groups 6 and 7 may be omitted where they are not applicable to the enterprise) listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Instrument systems and components include:

1. Pitot/static system components, ASIs, VSIs, air data systems and components, Machmeters, altimeters including servo and encoding altimeters, angle of attack and stall warning/avoidance systems
2. Turn and slip indicators, DGs, AHs, AHRS and components, remote reading gyro compass systems and components and direct reading compasses
3. Turbine engine indication systems and components (tachometers, pressure, temperature, engine performance, engine vibration)
4. Transmitter/indicator measuring instrument systems (pressure, temperature and position)
5. Fuel quantity indication and flow systems and components
6. GPWS
7. FDRs.

Troubleshooting

Troubleshooting involves the use of fault finding charts or similar, to line replacement level.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA214C Inspect, test and troubleshoot aircraft basic communication and radio navigation systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot basic communication and radio navigation systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot basic communication and radio navigation systems and components. Applications include fixed and rotary wing aircraft that have basic communication and radio navigation systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA206C	Remove and install basic radio communication and navigation system

Prerequisite units		
		components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic communication and radio navigation systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. Communication and radio navigation systems and components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust basic communication and radio navigation	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation.

ELEMENT	PERFORMANCE CRITERIA
systems and components.	2.2. Communication and radio navigation systems are functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot basic communication and radio navigation systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Communication and radio navigation system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard operating procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the radio frequency and communications system being maintained
- Recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in:
 - High frequency (HF) and very high frequency (VHF) communications systems
 - Very high frequency omni-directional range (VOR) and automatic direction finding (ADF) navigation systems
 - Emergency location transmitter (ELT) systems.
- Applying logic processes, taking and interpreting system measurements to

REQUIRED SKILLS AND KNOWLEDGE

- accurately and effectively isolate malfunctions within the above systems
- Testing listed systems to isolate system faults and assess post maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), function and operation of:
 - HF and VHF communications systems
 - VOR and ADF navigation systems
- ELT systems
- Communication and radio frequency navigation system maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Basic principles/functions, relating to the above systems and associated with:
 - electromagnetic radiation and propagation
 - basic AC and DC circuit theory
 - printed circuit boards
 - digital fundamentals
 - analogue fundamentals
 - transmitter and receiver principles
 - antenna characteristics
 - transmission line characteristics
 - fibre optic communications
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic communication and radio navigation systems and components while observing all relevant safety

EVIDENCE GUIDE	
	precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft basic communication and radio navigation systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of basic aircraft communication and radio navigation systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 to 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Communication and radio navigation systems

Communication and radio navigation systems and components include:

1. HF, VHF
2. ADF, VOR
3. ELT.

Troubleshooting

Troubleshooting involves the use of fault finding charts or similar, to line replacement level.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA215C Inspect, test and troubleshoot advanced aircraft communications systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot advanced communications systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot advanced communication systems and components. Applications include fixed and rotary wing aircraft that have advanced communication systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA206C	Remove and install basic radio communication and navigation system

Prerequisite units		
		components
	MEA246C	Manufacture and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect advanced communications systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. <i>Communications system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported
2. Test/adjust advanced communications systems and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Communications system is functionally tested, in

ELEMENT	PERFORMANCE CRITERIA
	accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot advanced communications systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Communications system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS procedures
- Use of approved maintenance documentation and aircraft publications relating to the communications system being maintained
- Recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in:
- external communications systems (Ultra High Frequency (UHF), Satellite Communications (SATCOM))
- internal communications systems (intercommunication and cockpit voice recorders(CVR))
- Applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within the above systems

REQUIRED SKILLS AND KNOWLEDGE
• Testing listed systems to isolate system faults and assess post maintenance serviceability.
Required knowledge
Look for evidence that confirms knowledge of: • Component attachment methods • The basic layout (block diagram level), function and operation of: • external communications systems (UHF, SATCOM) • internal communications systems (intercommunication and cockpit voice recorders) • Maintenance requirements for the above systems and troubleshooting procedures • Relevant OHS practices • Basic principles/functions, relating to the above-listed systems and associated with: • electromagnetic radiation and propagation • basic AC and DC circuit theory • printed circuit boards • digital fundamentals • analogue fundamentals • transmitter and receiver principles • antenna characteristics • transmission line characteristics • Relevant maintenance manuals • Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot advanced communication systems and components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely

EVIDENCE GUIDE	
competency in this unit	involvement of supervisors or other trades) associated with advanced communication systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of advanced communication systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 and 2 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Communications systems and components	<i>Communications systems and components include:</i> 1. UHF, SATCOM 2. Intercommunication and CVR systems.
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA216C Inspect, test and troubleshoot instrument landing systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot instrument landing systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot ILS systems and components. Applications include fixed and rotary wing aircraft that have ILS systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA206C	Remove and install basic radio communication and navigation system components
	MEA207C	Remove and install aircraft electronic system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect instrument landing systems (ILS) and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. ILS components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual.

ELEMENT	PERFORMANCE CRITERIA
	1.4. Defects are correctly identified and reported.
2. Test/adjust ILS and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. ILS is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot ILS.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. ILS faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the instrument landing system (ILS) being maintained
- Recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in instrument landing systems
- Applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within the system
- Performing system testing to isolate system faults and assess post maintenance

REQUIRED SKILLS AND KNOWLEDGE
serviceability
Required knowledge
Look for evidence that confirms knowledge of: • Component attachment methods • The basic layout (block diagram level), function and operation of the system • Integration with other avionic systems • The location and operation of ground: • marker beacons • localiser transmitter • glideslope transmitter • ILS maintenance requirements and troubleshooting procedures • Relevant OHS practices • Basic principles/functions relating to the system and associated with: • electromagnetic radiation and propagation • basic AC and DC circuit theory • digital fundamentals • analogue fundamentals • transmitter and receiver principles • antenna characteristics • transmission line characteristics • Relevant maintenance manuals • Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot ILS systems and components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and

EVIDENCE GUIDE	
competency in this unit	troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft ILS systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of ILS systems and components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on an ILS system and at least one major system component/ line replaceable unit (LRU). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA217C Inspect, test and troubleshoot fixed wing autopilot systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot multi-axis autopilot systems and components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot fixed wing multi-axis autopilot systems and components. Applications include fixed wing aircraft that have multi-axis autopilot systems, including those incorporating a radio-coupled flight director.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units			
	<table> <tr> <td>MEA207C</td><td>Remove and install aircraft electronic</td></tr> </table>	MEA207C	Remove and install aircraft electronic
MEA207C	Remove and install aircraft electronic		

Prerequisite units		
		system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect fixed wing autopilot systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. <i>Autopilot systems and components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust fixed wing autopilot systems and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Autopilot systems are functionally tested, in

ELEMENT	PERFORMANCE CRITERIA
	accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot fixed wing autopilot systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Autopilot system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the autopilot and flight director system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight director components and interface
 - multi-axis autopilot system components
- Applying logic processes, taking and interpreting system measurements, use test equipment and appropriate wiring diagrams and manuals, to accurately and effectively isolate malfunctions in the above systems
- Testing listed systems to isolate system malfunctions and assess post maintenance serviceability.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), function and operation of:
 - flight director components and interface
 - multi-axis autopilot system components
- Integration with other avionic systems, e.g. flight management systems and navigation systems
- Flight director and autopilot system maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Basic principles/functions, relating to the listed systems and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - fixed wing flight theory
 - inner and outer loop control
 - flight control modes/channels
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot fixed wing multi-axis autopilot systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with fixed wing aircraft autopilot systems and

EVIDENCE GUIDE

	components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across an autopilot system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on an autopilot system and its components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Autopilot systems and components

Autopilot systems and components may include:
Three axis autopilot systems and components, including those incorporating a radio-coupled flight director

Troubleshooting

Troubleshooting involves the use of fault finding charts or similar, to line replacement level.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA218C Inspect, test and troubleshoot rotary wing autopilot systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot autopilot systems and components fitted to rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot rotary wing autopilot systems and components. Applications include rotary wing aircraft that have autopilot systems, including those incorporating a radio-coupled flight director.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic

Prerequisite units		
		system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect rotary wing autopilot systems and components.	1.1.Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3.<i>Autopilot systems and components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4.Defects are correctly identified and reported.
2. Test/adjust rotary wing autopilot systems and components.	2.1.Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2.Autopilot systems are functionally tested, in

ELEMENT	PERFORMANCE CRITERIA
	accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot rotary wing autopilot systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Autopilot system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the autopilot and flight director systems being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight director components and interface
 - autopilot system components
- Applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals, to accurately and effectively isolate malfunctions in the listed systems
- Testing to isolate system malfunctions and assess post maintenance serviceability

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), function and operation of:
 - flight director components and interface
 - autopilot system components
- Integration with other avionic systems, e.g. flight management systems and navigation systems
- Flight director and autopilot system maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Basic principles/functions, relating to the above-listed systems and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - rotary wing flight theory
 - inner and outer loop control
 - flight control modes/channels
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot rotary wing autopilot systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with rotary wing aircraft autopilot systems and

EVIDENCE GUIDE

	components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across an autopilot system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on an autopilot system and its components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Autopilot systems and components	<i>Autopilot systems and components may include:</i> Rotary wing aircraft autopilot systems, including those incorporating a radio-coupled flight director
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA219C Inspect, test and troubleshoot aircraft pressurisation control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit, coupled with MEA208B, is part of the Avionic Certificate IV AME training pathway, and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to inspect, test and troubleshoot pressurisation control systems and components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot fixed wing aircraft pressurisation control systems and components. Applications include fixed wing aircraft that have pressurisation systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA208C	Remove and install pressurisation control system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect pressurisation control systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. Pressurisation control systems and components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust pressurisation control	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
systems and components.	power/system operation. 2.2. Pressurisation control systems are functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot pressurisation control systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Pressurisation control system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the pressurisation control system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - cabin altimeters, differential pressure indicators and cabin rate of climb indicators
 - pressure controllers (manual and automatic)
 - safety switches

REQUIRED SKILLS AND KNOWLEDGE

- Applying logic processes, take and interpret system measurements, use test equipment and appropriate wiring diagrams and manuals to accurately and effectively isolate malfunctions in the listed system components
- Assisting with the performance of pressurisation system testing to isolate system malfunctions and assess post maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), function and operation of the listed components and their operation and function within the aircraft pressurisation system, including applicable interface with the outflow and safety valves:
 - cabin altimeters
 - differential pressure indicators
 - cabin rate of climb indicators
 - pressure controllers (manual and automatic)
 - safety switches
- Basic principles/functions, relating to the listed system components and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - atmospheric conditions, properties and effect on humans
 - pressurisation terminology
- Pressurisation control system maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must

EVIDENCE GUIDE	
	be able to inspect, test and troubleshoot fixed wing aircraft pressurisation control systems and components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with fixed wing aircraft pressurisation control systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a pressurisation control system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a pressurisation control system and its components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Troubleshooting

Troubleshooting involves the use of fault finding charts or similar, to line replacement level.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector

Competency field

Competency field

Aviation maintenance

Co-requisite units

Co-requisite units		

MEA220C Inspect, test and troubleshoot aircraft primary radar systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot primary radar systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot primary radar systems and components. Applications include fixed and rotary wing aircraft that have primary radar systems, such as weather radar.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic system components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect primary radar systems and components.	1.1.Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3.Primary radar system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4.Defects are correctly identified and reported
2. Test/adjust primary radar systems and components.	2.1.Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2.Primary radar system is functionally tested, in accordance with maintenance manual, for evidence

ELEMENT	PERFORMANCE CRITERIA
	of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot primary radar systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Primary radar system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements.

Required Skills and Knowledge

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), function and operation of primary radar systems
- Basic principles/functions relating to the system components and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - radar fundamentals
 - transmission lines, waveguide and antenna characteristics
- Primary radar system maintenance requirements and troubleshooting procedures
- Relevant OHS practices including those relating to ground functional testing of radar systems
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot primary radar systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with primary radar systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a primary radar system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a primary radar system and at least one major system component/ line replaceable unit (LRU). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA221C Inspect, test and troubleshoot aircraft secondary radar systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot secondary radar systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot secondary radar systems and components. Applications include fixed and rotary wing aircraft that have secondary radar systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic system components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect secondary radar systems and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. Secondary radar system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust secondary radar systems and components	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. <i>Secondary radar system</i> is functionally tested, in accordance with maintenance manual, for evidence

ELEMENT	PERFORMANCE CRITERIA
	of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot secondary radar systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Secondary radar system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- Use of approved maintenance documentation and aircraft publications relating to the pulse system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses/transmission lines) and security in:
 - distance measuring equipment (DME) components and interface
 - radio altimeters
 - air traffic control (ATC) transponders
 - doppler navigation system
 - airborne collision avoidance system (ACAS)
- Applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within the systems

REQUIRED SKILLS AND KNOWLEDGE
• Testing systems to isolate system malfunctions and assess post maintenance serviceability
Required knowledge
Look for evidence that confirms knowledge of: • Component attachment methods • The basic layout (block diagram level), function and operation of: • DME including components and interface • radio altimeters • ATC transponders • doppler navigation system • ACAS • Basic principles/functions, relating to the listed systems and associated with: • basic AC and DC circuit theory • digital fundamentals • analogue fundamentals • radar fundamentals • transmission lines, waveguide and antenna characteristics • Pulse system maintenance requirements and troubleshooting procedures • Relevant OHS practices • Relevant maintenance manuals • Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot secondary radar systems and components while observing all relevant safety precautions
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated

EVIDENCE GUIDE

	with secondary radar systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across secondary radar systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one of the secondary radar systems in Groups 1 to 5 in the Range Statement and its major system components/ line replaceable units (LRU). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Secondary radar systems	<i>Secondary radar systems include:</i> 1. ATC transponder 2. Radio altimeter 3. DME 4. Doppler navigation system 5. ACAS
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA222C Inspect, test and troubleshoot aircraft oxygen systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME training pathways and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to inspect, test and troubleshoot oxygen systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot aircraft oxygen systems and components. Applications include fixed and rotary wing aircraft that have oxygen systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect oxygen system components.	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. <i>Oxygen system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported.
2. Test/adjust oxygen systems.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Oxygen system is functionally tested, in accordance

ELEMENT	PERFORMANCE CRITERIA
	with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot oxygen systems.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Oxygen system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of appropriate OHS practices
- The use of approved maintenance documentation and aircraft publications relating to aircraft oxygen systems and components for the purpose of system testing
- General application of logical fault-finding and use of truth tables during troubleshooting
- Interpreting oxygen system instruments, gauges, warning annunciators and test equipment, ie leak detectors
- Applying the methods used to locate, identify and access oxygen system components for inspection, testing and troubleshooting
- Demonstrating the procedure to replenish a dry breathing oxygen system, including:
 - correct identification of oxygen ground trolleys

REQUIRED SKILLS AND KNOWLEDGE

- maximum charging pressures for low and high pressure systems
- safety precautions to be adhered to during replenishment
- correct order of procedural replenishment steps
- Demonstrating the procedure to purge a dry breathing oxygen system, including:
 - reasons for the requirement to undertake a purging operation
 - identification of acceptable system purging gases
 - safety precautions to be adhered to during purging
 - correct techniques to be employed when purging oxygen storage cylinders or systems

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods, connection of hardware and couplings and their physical security within the aircraft
- Oxygen system isolation
- Properties of aircraft oxygen and requirements for aircrew/passengers
- Properties of the atmosphere and how they vary.
- Defining terms and units of measurement relating to aircraft altitude and system pressures
- Layout of low and high-pressure dry breathing oxygen systems and components
- Operation of oxygen systems and components including:
 - pressure demand regulators
 - passenger service regulators
 - altitude sensing barometers
- Methods by which gaseous dry breathing oxygen is stored in both the aircraft and within the workplace environment. Reference to storage trolleys, aircraft cylinders and chemical oxygen cylinders is required
- Oxygen system maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

EVIDENCE GUIDE	
Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot aircraft oxygen systems and components while observing all relevant safety precautions
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft oxygen systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of aircraft oxygen systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 and 2 in the Range Statement (Groups 3 and 4 may be omitted where they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that

EVIDENCE GUIDE	
	general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Oxygen system components	<i>Oxygen system components include:</i> 1. Oxygen pressure cylinders, valves and gauges 2. Regulators, masks (including other integrated systems), pipes, hoses and fittings 3. Chemical generators 4. Liquid Dry Breathing Oxygen (LDBO) converters
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA209C	Remove and install aircraft oxygen system components

MEA223C Inspect aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to inspect electrical systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 or the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to inspect aircraft electrical systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect electrical systems and components	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. <i>Electrical system components</i> and hardware are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and recorded in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the avionic system being maintained
- Recognition of system and electrical component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - AC and DC power generation systems including regulation, distribution, control and cooling
 - battery installations and inverters
 - flight control and/or electro-hydraulic systems
 - engine ignition, starting, fuel distribution and control systems
 - internal/external lighting systems, including controls
 - doors
 - landing gear systems
 - anti-skid braking systems
 - master caution and warning systems
 - auxiliary systems (including ice/rain protection, fire detection, environmental control and pressurisation, waste and water, equipment and furnishings)

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods and connection of hardware
- Explaining the basic layout (block diagram level), and operation of:
 - AC and DC power generation systems including regulation, distribution, control and cooling
 - battery installations and inverters
 - flight control and/or electro-hydraulic systems
 - engine ignition, starting, fuel distribution and control systems
 - internal/external lighting systems, including controls
 - doors
 - landing gear systems
 - anti-skid braking systems
 - master caution and warning systems
 - auxiliary systems (including ice/rain protection, fire detection, environmental control and pressurisation, waste and water, equipment and furnishings)

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect aircraft electrical systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft electrical systems and components. It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This is to be demonstrated through application across a range of aircraft electrical systems, components and hardware listed in the Range Statement. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and related components in each Group 1 to 13 inclusive (Groups 14 to 17 may be omitted where they are not applicable to the enterprise) in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground

EVIDENCE GUIDE	
	support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical systems and components	<i>Electrical systems and components may include:</i> 1. AC and/or DC power generation, regulation and distribution systems 2. Battery installations and bus ties/interlocks 3. Rotary and static inverters and TR units 4. Air cycle air conditioning and pressurisation systems 5. Flight, and engine control systems 6. Ignition and starting systems 7. Fire/smoke detection and extinguishing 8. Lighting 9. Master and caution warning systems 10. Equipment and furnishing 11. Equipment cooling and ventilation 12. Position indicating systems 13. Fuel storage and distribution

RANGE STATEMENT	
	14. Propeller control systems 15. Landing gear indication and antiskid 16. Ice and rain protection 17. Waste water
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA203C	Remove and install advanced aircraft electrical system components

MEA224B Inspect aircraft instrument systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to inspect instrument systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to inspect aircraft instrument systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect instrument systems and components.	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. <i>Instrument system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and recorded in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • Application of relevant OH&S practices • The use of approved maintenance documentation and aircraft publications relating

REQUIRED SKILLS AND KNOWLEDGE

to the instrument system being maintained

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - pitot/static systems and associated instruments and systems
 - flight instruments
 - GPWS and FDR
 - stall warning, angle of attack and stall avoidance systems
 - navigation systems (compasses, AHRS)
 - pressure measurement, position indicators, engine/auxiliary system indication systems including fuel quantity and flow

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods and connection of hardware
- Explaining the basic layout (block diagram level) and operation of:
 - pitot/static systems and associated instruments and systems
 - flight instruments
 - GPWS and FDR
 - stall warning, angle of attack and stall avoidance systems
 - navigation systems (compasses, AHRS)
 - pressure measurement, position indicators, engine/auxiliary system indication systems including fuel quantity and flow

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot aircraft instrument systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other

EVIDENCE GUIDE	
competency in this unit	trades) associated with aircraft instrument systems and components. It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection is essential. This is to be demonstrated through application across a range of aircraft instrument systems and components listed in the Range Statement. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 to 7 (Group 7 may be omitted where it is not applicable to the enterprise) listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

RANGE STATEMENT	
wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Instrument systems and components	<i>Instrument systems and components may include:</i> 1. Flight instruments including pitot/static systems, Airspeed Indicators (ASIs), Vertical Speed Indicators (VSIs), altimeters, altitude alerting and reporting, turn and bank and slip/turn coordinators, Directional Gyros (DGs), Artificial Horizons (AHs) (air and electrically driven) 2. Machmeters, air data systems, angle of attack, stall warning and avoidance systems 3. Flight Data Recorders (FDRs) 4. Engine indication systems 5. Magnetic compasses and Attitude and Heading Reference Systems (AHRS) 6. Miscellaneous instrument systems including pressure measurement, fuel quantity, fuel flow, position indication, voltage and frequency, current and power 7. Ground Proximity Warning Systems (GPWS)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA205C	Remove and install advanced aircraft general instrument system components

MEA225B Inspect fixed wing aircraft automatic flight control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to inspect automatic flight control systems and components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to inspect, aircraft automatic flight control systems and components. Applications include fixed wing aircraft that have automatic flight control systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic system components
	MEA246C	Fabricate and/or repair aircraft

Prerequisite units		
		electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect automatic flight control systems and components.	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. <i>Automatic flight control system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and recorded in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE**Required skills**

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the automatic flight control system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in automatic flight control system and components

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- The basic layout (block diagram level), and operation of the system

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect automatic flight control systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft automatic flight control systems and components. It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This is to be demonstrated through application across a range of

EVIDENCE GUIDE	
	aircraft automatic flight control systems and components listed in the Range Statement. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4 (Group 5 may be omitted where it is not applicable to the enterprise) listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Automatic flight control systems and components	<i>Automatic flight control systems and components may include automatic pilots and associated</i>

RANGE STATEMENT	
	integrated systems and components, including: 1. Automatic pilot 2. Flight director 3. Automatic trim 4. Yaw damper 5. Automatic throttle and automatic landing
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA226C Inspect aircraft electronic systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to inspect electronic systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to inspect aircraft electronic systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect electronic systems and components.	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. <i>Electronic system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and recorded in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • Application of relevant occupational health and safety (OHS) practices • The use of approved maintenance documentation and aircraft publications relating

REQUIRED SKILLS AND KNOWLEDGE

to the avionic system being maintained

- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - multi-function display systems (interface units, display generators, display units), i.e. head-up display systems (HUD), engine indicating and crew alerting systems (EICAS), flight management systems (FMS), ACARS, electronic flight instrument systems (EFIS), electronic centralised aircraft monitor systems (ECAM)
 - integrated modular avionics
 - inertial navigation systems (INS), inertial reference systems (IRS)
 - external communications systems - high frequency (HF), ultra high frequency (UHF), very high frequency (VHF), satellite communication (SATCOM), emergency location transmitter (ELT)
 - internal communications systems - intercommunication, cockpit voice recorders (CVR), cockpit/cabin audio visual, data systems, cabin network services)
 - information systems such as air traffic and information management systems and network server systems
 - radio frequency navigation systems - instrument landing system (ILS), very high frequency omni-range (VOR), automatic direction finding (ADF), global navigation system (GNS)
 - primary radar (navigation/weather) components and interface
 - aircraft collision avoidance (ACAS) components and interface
 - radio altimeter components and interface
 - distance measuring equipment (DME) components and interface
 - ATC Transponders

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods and connection of hardware
- The basic layout (block diagram level) and operation of:
 - multi-function display systems (interface units, display generators, display units), i.e. HUD, ICAS, FMS, ACARS, EFIS, ECAM
 - integrated modular avionics
 - INS, IRS
 - external communications systems - HF, UHF, VHF, SATCOM, ELT
 - internal communications systems - intercommunication, Cockpit Voice Recorders, cockpit/cabin audio visual, data systems, cabin network services
 - information systems such as air traffic and information management systems and network server systems

REQUIRED SKILLS AND KNOWLEDGE

- radio frequency navigation systems - ILS, VOR, ADF, GNS
- primary radar (navigation/weather) components and interface
- ACAS components and interface
- radio altimeter components and interface
- DME components and interface
- ATC Transponders.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect aircraft electronic systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft electronic systems and components. It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This is to be demonstrated through application across a range of electronic systems and components listed in the Range Statement. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on each type of system listed in Groups 1 to

EVIDENCE GUIDE	
	7 in the Range Statement and at least one component for each listed system type (Groups 6 and 7 may be omitted where they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electronic systems and components	<i>Electronic systems and components include:</i> 1. Electronic instrument displays - electronic flight instrument systems (EFIS), engine indicating and crew alerting systems (EICAS), flight management systems (FMS), electronic centralised aircraft monitor systems (ECAM), and head-up display systems (HUD) (where applicable to enterprise) 2. Instrument navigation systems - inertial navigation systems (INS), inertial reference

RANGE STATEMENT	
	systems (IRS), compasses and attitude and heading reference systems (AHRS) 3. Communication systems - high frequency (HF), very high frequency (VHF), ultra high frequency (UHF), satellite communication (SATCOM), intercom, data and cabin network services, emergency location transmitter (ELT) and cockpit voice recorder (CVR) 4. Radio navigation systems - automatic direction finding (ADF), very high frequency omni-range (VOR), instrument landing system (ILS), and global navigation system (GNS) 5. Pulse operated systems - weather radar, navigation radar, ATC transponder, radio altimeter (RADALT), distance measuring equipment (DME), doppler and aircraft collision avoidance system (ACAS) (where applicable to enterprise) 6. Integrated modular avionics (where applicable to enterprise) 7. Information systems - air traffic and information management, network servers (where applicable to enterprise)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA207C	Remove and install aircraft electronic system components

MEA227C Test and troubleshoot aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV training pathways and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to test and troubleshoot electrical systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 or the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to test and troubleshoot aircraft electrical systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify an unserviceability.
2. Test/adjust electrical systems.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Electrical system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot electrical systems.	3.1. Available information from maintenance documentation and inspection and test results is

ELEMENT	PERFORMANCE CRITERIA
	used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Rectification requirements are determined.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices
- The use of approved maintenance documentation and aircraft publications relating to the electrical system being maintained
- Recognition of system and electrical component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - AC and DC power generation systems including regulation, distribution, control and cooling
 - battery installations
 - flight control and/or electro-hydraulic systems
 - engine ignition; starting; fuel distribution and control systems
 - internal/external lighting systems, including controls
 - landing gear systems
 - antiskid braking systems
 - auxiliary systems (including ice/rain protection, fire detection, environmental control and pressurisation, water and waste, doors, propeller control, equipment and furnishings)
 - equipment cooling and ventilation systems
 - master caution and warning systems

REQUIRED SKILLS AND KNOWLEDGE

- Applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate electrical system malfunctions of the above components and systems
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability.

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware
- Explaining the basic layout (block diagram level), function and operation of:
 - AC and DC power generation systems including regulation, distribution, control and cooling
 - battery installations
 - flight control and/or electro-hydraulic systems
 - engine ignition; starting; fuel distribution and control systems
 - internal/external lighting systems, including controls
 - landing gear systems
 - antiskid braking systems
 - auxiliary systems (including ice/rain protection, fire detection, environmental control and pressurisation, water and waste, doors, propeller control, equipment and furnishings)
 - equipment cooling and ventilation systems
 - master caution and warning systems
- Explaining basic principles/functions, relating to systems listed above and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - AC and DC generator characteristics
 - single and polyphase AC motors and DC motors
 - rotary and static inverters
 - air cycle air conditioning
 - electrical sensing and transmitting devices

Evidence Guide**EVIDENCE GUIDE**

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot DC and AC electrical systems and components, including looms, cables and connection hardware, while observing all relevant safety precautions

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft electrical systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to testing and troubleshooting is essential. This is to be demonstrated through application across a range of aircraft electrical systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a system and at least one item from each of Groups 1 to 14, including a battery check in the case of Group 14 (Groups 15 to 17 may be omitted where they are not applicable to the enterprise) in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical systems and components	<i>Electrical systems may include the following electrical systems and components, including all related electrical hardware, looms and cables:</i> 1. AC and/or DC power generation, regulation and distribution systems 2. Rotary and static inverters and TR units 3. Air cycle air conditioning and pressurisation systems 4. Flight and engine control systems 5. Ignition and starting systems 6. Fire/smoke detection and extinguishing 7. Lighting (internal and external) 8. Master and caution warning systems

RANGE STATEMENT	
	9. Equipment cooling and ventilation 10. Equipment and furnishing 11. Position indicating systems 12. Fuel storage and distribution 13. Landing gear indication and antiskid 14. Main batteries and battery bus ties/interlocks 15. Propeller control systems 16. Ice and rain protection 17. Waste water
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		
	MEA223C	Inspect aircraft electrical systems and components

MEA228C Test and troubleshoot aircraft instrument systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to test and troubleshoot aircraft instrument and display systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the testing and troubleshooting of aircraft instrument and display systems and components during both scheduled and unscheduled maintenance. Applications include instrument and display systems and components fitted to both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1. Relevant maintenance documentation and modification status, including system defect/ service difficulty reports where relevant, are interpreted to identify an unserviceability.
2. Test/adjust instrument and display systems.	2.1. The aircraft and systems are correctly prepared, in accordance with specified procedures, for the application of power and system operation. 2.2. Instrument or display system is functionally tested, in accordance with specified procedures, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with specified procedures.
3. Troubleshoot instrument and display systems.	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault

ELEMENT	PERFORMANCE CRITERIA
	determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Instrument or display system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Use of hand skills, tools and test equipment in the testing, adjustment and troubleshooting of instrument and display systems
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) for the systems listed in Range Statement
- Interpreting the information presented on instrument and display systems
- Applying logic processes and using appropriate wiring diagrams and manuals to isolate instrument and display system malfunctions
- Performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- The effective use of maintenance documentation and relevant fault diagnosis guides in the troubleshooting process
- Application of standard procedures
- Observance of all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- Standard trade practices relating to tool and test equipment usage and

REQUIRED SKILLS AND KNOWLEDGE

- installation/securing of system components
- The basic layout (block diagram level) of the systems listed in the Range Statement
- The operating principles of the systems listed in the Range Statement and associated with the properties and effects of atmospheric conditions on aircraft instruments and systems, pressure and temperature sensing elements and their use in aircraft instruments, gyroscopes and their use in aircraft instrument and reference systems, electrical fundamentals and display screen generation
- The various methods of navigation and how they are used by both conventional and electronic navigational instruments and systems
- OHS procedures relating to instrument and display systems and components
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures, including software management control

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot a range of instrument and display systems and components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes. Coverage of display systems is required only where applicable to the enterprise.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft instrument and display systems and their components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

EVIDENCE GUIDE	
	Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a range of aircraft instrument and display systems (where display systems are applicable to the enterprise) listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on a system and on at least one major system component of each Group 1 to 6 (Groups 5 and 6 may be omitted if not applicable to the enterprise), as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information to enable troubleshooting to line replaceable item level
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Instrument or display systems	<i>Instrument or display systems may include:</i> 1. Flight instruments - pitot/static systems, airspeed indicators (ASIs) machmeters, air data systems and instruments, vertical speed indicators (VSIs), altimeters, altitude alerting and reporting, turn and bank, directional gyros (DGs), artificial horizons (AHs), angle of attack, stall warning/avoidance, ground proximity warning system (GPWS), flight data recorders (FDRs 2. Engine Instruments - engine speed, pressure, temperature, performance, vibration, torque 3. Instrument navigation systems - inertial navigation systems (INS), inertial reference systems, compasses, attitude heading reference system (AHRS) 4. Miscellaneous - pressure, fuel quantity, fuel flow, position, voltage, frequency, current, power 5. Display systems - electronic flight instrument systems (EFIS), engine indicating and crew alerting systems (EICAS), flight management computer systems (FMCS), electronic centralised aircraft monitor (ECAM), head-up display (HUD) 6. Integrated modular avionics
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities

RANGE STATEMENT**Procedures and requirements**

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA224B

Inspect aircraft instrument systems and components

MEA226C

Inspect aircraft electronic systems and components

MEA229C Test and troubleshoot aircraft radio frequency navigation and communications systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to test and troubleshoot radio frequency navigation and communication systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to test and troubleshoot communication and radio frequency navigation systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA226C	Inspect aircraft electronic systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify an unserviceability.
2. Test/adjust RF navigation and communications systems	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. RF navigation or communication system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot RF navigation and communications	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault

ELEMENT	PERFORMANCE CRITERIA
systems	determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. RF navigation or communication system faults are located and the causes are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the radio frequency and communications system being maintained
- Recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in:
 - external communications systems - high frequency (HF), ultra high frequency (UHF), very high frequency (VHF), satellite communication (SATCOM), microwave
 - internal communications systems - Intercommunication, cabin intercommunication data systems, cabin network services, cockpit voice recorders (CVR)
 - information systems such as air traffic and information management systems and network server systems
 - radio frequency navigation systems - instrument landing system (ILS), VHF omni-directional range (VOR), automatic direction finding (ADF), global navigation system (GNS), ARINC communications addressing and reporting system (ACARS)
 - emergency location transmitter (ELT) systems.
- Applying logic processes, taking and interpreting system measurements to

REQUIRED SKILLS AND KNOWLEDGE

- accurately and effectively isolate malfunctions within the systems
- Performing system testing to isolate system faults and assess post maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Evidence of knowledge of component attachment methods
- Explaining the basic layout (block diagram level), function and operation of:
 - external communications systems - HF, UHF, VHF, SATCOM, microwave
 - internal communications systems - Intercommunication, cabin intercommunication data systems, cabin network services, CVR
 - information systems such as air traffic and information management systems and network server systems
 - RF navigation systems - ILS, VOR, ADF, GNS, ACARS
 - ELT systems.
- Explaining basic principles/functions relating to the above systems and associated with:
 - electromagnetic radiation and propagation
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - antenna characteristics
 - transmission line characteristics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot communication and radio frequency navigation systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate

The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of

EVIDENCE GUIDE

competency in this unit

supervisors or other trades) associated with aircraft communication and radio frequency navigation systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to testing and troubleshooting is essential. This is to be demonstrated through application across a range of aircraft communication and radio frequency navigation systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one system and its major components from each of Groups 1 to 4 (Groups 2 and 3 may be omitted where the listed systems are not applicable to the enterprise) and the general associated components in Group 5, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.

Method of assessment

Guidance information for assessment

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
RF navigation or communication systems	<i>RF navigation or communication systems may include:</i> 1. Control and sensing associated with cockpit radio, ground and flight crew communications and may comprise FM and AM modes of operation in the HF, UHF, and VHF bands, microwave systems and SATCOM 2. Passenger communications, cockpit voice recorder, Audio Integration system, cabin intercommunication data systems, cabin network services 3. Information systems such as air traffic and information management systems and network server systems 4. ILS, VOR, ADF, GNS, emergency beacons, ACARS 5. Antennae, impedance audio matching devices, microphones and headphones, transmission lines, computer controls, line replaceable units, transmitters/receivers and indicators
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities

RANGE STATEMENT

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector

Competency field

Competency field

Aviation maintenance

Co-requisite units

Co-requisite units

MEA230B Test and troubleshoot fixed wing aircraft automatic flight control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways and is an alternative unit to MEA231B. It covers the competencies required to test and troubleshoot automatic flight control systems and components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to test and troubleshoot aircraft automatic flight control systems and components. Applications include fixed wing aircraft that have automatic flight control systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft

Prerequisite units	
	electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting.	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify an unserviceability.
2. Test/adjust automatic flight control system	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. <i>Automatic flight control system</i> is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate.
3. Troubleshoot automatic flight control system	3.1. Available information from maintenance documents and inspection and test results is used, where necessary, to assist in fault determination.. 3.2. Maintenance manual fault diagnosis guides and

ELEMENT	PERFORMANCE CRITERIA
	logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Automatic flight control system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the automatic flight control system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight director components and interface
 - flight control components and interface
 - autothrottle components and interface
 - autopilot system and interface
- Applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals to accurately and effectively isolate malfunctions in the above systems
- Performing system testing to isolate system malfunctions and assess post maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Explaining the basic layout (block diagram level), function and operation of:
 - flight director components and interface

REQUIRED SKILLS AND KNOWLEDGE

- flight control components and interface
- autothrottle components and interface
- autopilot system and interface
- Explaining basic principles/functions, relating to the above systems and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - fixed wing flight theory
 - inner and outer loop control
 - fixed wing flight control system (mechanical, hydraulic and electro-mechanical types, trim and stabilisation)
 - flight control modes/channels

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot automatic flight control systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with fixed wing aircraft automatic flight control systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to testing and troubleshooting is essential. This is to be demonstrated through application across a range of

EVIDENCE GUIDE	
	aircraft automatic flight control systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4 listed in the Range Statement (Group 5 may be omitted where it is not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to

RANGE STATEMENT	
	facilitate specification of the assessment requirements included in the Evidence Guide.
Automatic flight control systems	<i>Automatic flight control systems may include:</i> 1. Automatic pilot 2. Flight director 3. Automatic trim 4. Yaw damper 5. Automatic throttle and automatic landing.
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		
	MEA225B	Inspect fixed wing aircraft automatic flight control systems and components

MEA231B Inspect, test and troubleshoot rotary wing aircraft automatic flight control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways and is an alternative unit to MEA225B and MEA230B. It covers the competencies required to inspect, test and troubleshoot automatic flight control systems and components fitted to rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot rotary wing automatic flight control systems and components. Applications include rotary wing aircraft that have automatic flight control systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic

Prerequisite units		
		system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect automatic flight control system and components	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. <i>Automatic flight control system</i> is visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and reported.
2. Test/adjust automatic flight control system	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Automatic flight control system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate

ELEMENT	PERFORMANCE CRITERIA
3. Prepare for troubleshooting	3.1. Relevant maintenance documentation and modification status including system defect reports, where relevant, are used to identify an unserviceability.
4. Troubleshoot automatic flight control system	4.1. Available information from maintenance documents and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Automatic flight control system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the automatic flight control and data system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight director components and interface
 - flight control components and interface
 - flight data recorders and interface
- Applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals to accurately and effectively isolate malfunctions in the above systems
- Testing systems to isolate system malfunctions and assess post maintenance

REQUIRED SKILLS AND KNOWLEDGE

serviceability.

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Explaining the basic layout (block diagram level), function and operation of:
 - flight director components and interface
 - flight control components and interface
 - flight data recorders and interface
- Explaining basic principles/functions relating to the above systems and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - rotary wing flight theory
 - inner and outer loop control
 - rotary wing flight control system (mechanical, hydraulic and electro-mechanical types, trim and stabilisation)
 - flight control modes/channels

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot rotary wing automatic flight control systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with rotary wing aircraft automatic flight control systems and components. It is essential that system testing procedures, cleanliness requirements and safety

EVIDENCE GUIDE

	precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of rotary wing automatic flight control systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Automatic flight control system	<i>Automatic flight control system may include:</i> 1. Flight director - includes indicators, computers, control boxes and interfaces with other systems 2. Flight controls - includes servo actuators (roll, pitch, yaw and trim) computers, sensors 3. Autopilot system - includes computers, sensors (gyros and/or accelerometers), controllers, mode selectors and system interface, CWS, disconnect, go around and trim switches.
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA232B Test and troubleshoot aircraft pulse systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to troubleshoot pulse systems and components fitted to fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to test and troubleshoot pulse systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA226C	Inspect aircraft electronic systems and components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify an unserviceability.
2. Test/adjust pulse systems.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Pulse system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot pulse systems.	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination.

ELEMENT	PERFORMANCE CRITERIA
	3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Pulse system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved maintenance documentation and aircraft publications relating to the pulse system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses/ transmission lines) and security in:
 - radar (navigation/weather) components and interface
 - traffic alert and collision avoidance (ACAS) components and interface
 - radio altitude components and interface
 - distance measuring equipment components and interface
 - ATC transponders
 - doppler navigation system
- Applying logic processes, taking and interpreting system measurements, to accurately and effectively isolate malfunctions within the systems
- Performing system testing to isolate system malfunctions and assess systems post maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Explaining the basic layout (block diagram level), function and operation of:

REQUIRED SKILLS AND KNOWLEDGE

- radar (navigation/weather) components and interface
- traffic alert and collision avoidance (ACAS) components and interface
- radio altitude components and interface
- distance measuring equipment components and interface
- ATC transponders
- doppler navigation system
- Explaining basic principles/functions relating to the above systems and associated with:
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - radar fundamentals
 - transmission lines, waveguide and antenna characteristics

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to test and troubleshoot communication and radio frequency navigation systems and components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft pulse systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to testing and troubleshooting is essential. This is to be demonstrated through application across a range of

EVIDENCE GUIDE	
	aircraft pulse systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least three of the systems in Groups 1 to 7 and at least one item from Group 8, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to

RANGE STATEMENT	
	facilitate specification of the assessment requirements included in the Evidence Guide.
Pulse systems and components	<i>Pulse systems and components may include:</i> 1. Navigation radar 2. Weather radar 3. Radio Altimeter (RADALT) 4. Distance Measuring Equipment (DME) 5. ATC transponder 6. Doppler 7. Traffic Alert and Collision Avoidance (ACAS). 8. Displays, indicators, control boxes, antennae, waveguides, transmitters and receivers, line replaceable units
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA233C Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot inertial navigation and reference systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot inertial navigation and reference systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA207C	Remove and install aircraft electronic system components

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect inertial navigation and reference systems and components.	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. Inertial navigation and reference system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and reported.
2. Test/adjust inertial navigation and reference systems and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation. 2.2. Inertial navigation and reference system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in

ELEMENT	PERFORMANCE CRITERIA
	accordance with maintenance manual, as appropriate
3. Prepare for troubleshooting.	3.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify an unserviceability.
4. Troubleshoot inertial navigation and reference systems	4.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Inertial navigation and reference system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Determine rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices
- The use of approved maintenance documentation and aircraft publications relating to inertial navigation and reference systems being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in inertial navigation and reference system components
- Applying logic processes, take and interpret system measurements, use test equipment and appropriate wiring diagrams and manuals to isolate system malfunctions
- Performing system functional tests and checks to isolate system faults and assess post maintenance serviceability

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Connection of hardware
- The basic layout (block diagram level), function and operation of inertial navigation and reference systems
- The operating principles of inertial navigation and reference systems:
 - terminology
 - fundamental principles of inertial navigation
 - two degree of freedom systems
 - semi-analytical systems
 - strapdown systems
 - ring laser gyroscopes
- The various methods of navigation and how they are used by both aircraft conventional and electronic navigational instruments and systems.
- Maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot inertial navigation and reference systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with inertial navigation and reference systems and components. It is essential that system testing procedures, cleanliness requirements and safety

EVIDENCE GUIDE

	precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across an inertial navigation and reference system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on an inertial navigation system and at least one major system component/line replaceable unit. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT

work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Troubleshooting

Troubleshooting involves the use of fault finding charts or similar, to line replacement level.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector

Competency field

Competency field

Aviation maintenance

Co-requisite units

Co-requisite units

MEA234C Inspect, test and troubleshoot aircraft global navigation systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot global navigation systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot global navigation systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA206C	Remove and install basic radio communication and navigation system components

Prerequisite units		
	MEA207C	Remove and install aircraft electronic system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect global navigation systems (GNS) and components.	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements. 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.3. GNS components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.4. Defects are correctly identified and reported
2. Test/adjust GNS and components.	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application

ELEMENT	PERFORMANCE CRITERIA
	of power/system operation. 2.2. GNS is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction. 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot GNS.	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. GNS faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures. 3.5. Determine rectification requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices
- The use of approved maintenance documentation and aircraft publications relating to the global navigation system (GNS) being maintained
- Recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in global navigation systems
- Applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within GNS
- Performing system testing to isolate system faults and assess post maintenance serviceability

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- GNS principles including the use of satellites for navigation
- Component attachment methods
- The basic layout (block diagram level), function and operation of GNS including interpretation of indicators and operation of controls
- Basic principles/functions relating to the system and associated with:
 - electromagnetic radiation and propagation
 - basic AC and DC circuit theory
 - digital fundamentals
 - analogue fundamentals
 - transmitter and receiver principles
 - antenna characteristics
 - transmission line characteristics
- Interface with other avionic systems, e.g. flight management systems
- Maintenance requirements and troubleshooting procedures
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot global navigation systems and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with global navigation systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood

EVIDENCE GUIDE	
	and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a global navigation system and, in cases where the system is not replaced as a single unit, at least one major system component/line replaceable unit. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA235B Perform advanced troubleshooting in aircraft avionic maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers competencies required to progress from an Aircraft Maintenance Engineer at Certificate IV to the granting of a B2 Aircraft Maintenance Engineer Licence or Aircraft Maintenance Specialist Certificate under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Assessment Guidelines. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer (Avionics or Mechanical as applicable) at Certificate IV are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of fundamental system/component knowledge and applicable maintenance publications and test equipment to troubleshoot faults in avionic systems that are beyond the bounds of maintenance manual fault diagnosis guides. Applications include fixed and rotary wing aircraft

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Verify the defect.	1.1. Available information from flight crew such as flight phase, aircraft configuration etc., maintenance documentation both current and previous history, is used as necessary, to assist in fault determination. 1.2. Inspection of the affected <i>system</i> is carried out to check both physical integrity and correct operation. Information gained from Central Maintenance Systems is verified against physical integrity and correct operation where applicable. The effects on a system from interfaces/integration with other systems are taken into account
2. Isolate the defect	2.1. Logical processes including the application of basic principles and system knowledge and known facts are used to augment maintenance manual fault

ELEMENT	PERFORMANCE CRITERIA
	diagnosis guides to ensure efficient and accurate troubleshooting. 2.2. Specialist advice is obtained, where required and/or available, to assist with the troubleshooting process. 2.3. Faults are located and the causes of the defects are clearly identified and correctly recorded in maintenance documentation including any other systems disturbed, where required.
3. Determine defect rectification requirements	3.1. Defect rectification requirements are determined and the necessary repair action initiated once verification and isolation of the defect are confirmed.
4. Verify defect rectification	4.1. Defect is rectified in accordance with (IAW) approved maintenance data. 4.2. All systems disturbed or accessed during troubleshooting are restored as applicable using maintenance manuals, repair schemes or approved maintenance data. 4.3. All check(s) required by approved maintenance data to ensure correct operation of all disturbed systems are performed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- The diagnosis of faults that are beyond the coverage of maintenance manual fault diagnosis guides in simulated applications in the training environment and/or in the workplace across a representative range of systems and components.

Required knowledge

For systems and components relevant to the scope of the licence/ratings sought as per CASR Part 43 Manual of Standards, look for evidence that confirms knowledge of:

- Theory related to system operation and interfaces between systems and with electrical/electronic control media to a level that will facilitate the diagnosis of faults beyond the level of maintenance manual fault diagnosis guides using

REQUIRED SKILLS AND KNOWLEDGE

- reported symptoms and functional test results
- Component construction and theory of operation to a level that will facilitate the diagnosis of faults beyond the level of maintenance manual fault diagnosis guides using reported symptoms and functional test results
- Advanced fault diagnostic techniques
- Condition monitoring and trend analysis techniques

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to diagnose a range of system faults that are beyond the bounds of maintenance manual fault diagnosis guides while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications related to avionic systems, and where applicable other system interfaces/integration. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical, as is the demonstrated ability to apply fundamental system theory in the logical diagnosis of complex faults.

Evidence of transferability of skills and knowledge related to performance and supervision of inspection, testing and troubleshooting is essential. This must be demonstrated through application across a number of aircraft avionic systems, including system interfaces/integration. The troubleshooting approach should clearly demonstrate an in-depth knowledge of underpinning theory of a system, with this knowledge being used in a logical process to augment and extend the scope of the aircraft/system fault finding guide. The fault

EVIDENCE GUIDE	
	rectification work plan should take account of applicable safety (including safe handling of heavy components) and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under supervision without intervention and the ability has been demonstrated to identify the causes of defects not covered fully by maintenance manual fault diagnosis guides. Competency shall be assessed via simulated activities at the CASR Part 147 Maintenance Training Organisation and through performance during observed workplace activities.
Context of and specific resources for assessment	Competency is assessed in the workplace or simulated workplace and shall involve successfully dealing with a number of maintenance and fault scenarios across a range of avionic systems listed as Groups 1 to 5 in the Range Statement and related system components.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Systems and related components	<i>Systems and related components to be covered</i>

RANGE STATEMENT	
	<i>include:</i> 1. Electrical systems 2. Electronic systems 3. Instrument systems 4. Radio communication and navigation systems 5. Autoflight systems
Troubleshooting	<i>Troubleshooting, for the purpose of this unit, is defined as:</i> The troubleshooting from first principles, of defects beyond available maintenance data in the systems of fixed or rotary wing aircraft types. Troubleshooting must be demonstrated across a range of typical systems and system components that includes but is not limited to airframes, engine(s) and other systems (and parts thereof) operated by inherently electrical, electronic, instrument or radio principles or means. Coverage is not required of specific type systems that are included in type training and Practical Consolidation of Training (PCT) activities leading to a specific type licence rating.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual activities or troubleshooting tasks performed during the supervision of other personnel
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware_components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate II training pathway. It covers the competencies required for the removal and installation under qualified person guidance of a range of aircraft electrical components and items of hardware that can have bolted, soldered or plug connections. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and relevant maintenance publications and documentation to remove and install a range of electrical components and electrical hardware under the guidance of a qualified person. Applications include both on and off-aircraft work.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to remove aircraft electrical hardware	1.1. The removal task is planned under qualified person guidance using applicable maintenance documentation and enterprise procedures. 1.2. System safety is confirmed with the qualified person.
2. Remove aircraft electrical hardware	2.1. Physical removal of electrical hardware is carried out in accordance with enterprise procedures and

ELEMENT	PERFORMANCE CRITERIA
	applicable maintenance documentation.
3. Complete aircraft electrical hardware removal process	3.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures. 3.2. Removed components are tagged, packaged or discarded in accordance with specified procedures.
4. Prepare to install aircraft electrical hardware	4.1. The installation task is planned under qualified person guidance using applicable maintenance documentation and enterprise procedures. 4.2. Electrical hardware components to be installed are checked to confirm correct part numbers.
5. Install aircraft electrical hardware	5.1. Physical installation of electrical hardware is carried out in accordance with enterprise procedures and applicable maintenance documentation.
6. Complete aircraft electrical hardware installation process	6.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S practices
- the use of enterprise procedures, applicable maintenance documentation and aircraft publications relating to the electrical system and components being worked on
- the preparation and termination of electrical cables to aircraft industry standards, using:
 - crimping techniques
 - soldering techniques
 - solder sleeve joints
- the correct identification of aircraft wire markings, terminal block identification and plug/socket pin numbering systems.
- electrical loom and harness installation ensuring minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no

REQUIRED SKILLS AND KNOWLEDGE

chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards.

- positive identification of miscellaneous electrical hardware and/or components.

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- electrostatic discharge procedures
- connection of hardware, plugs and terminals points
- wire marking, terminal block identification and plug/socket numbering systems

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install a range of electrical components/hardware while observing electrostatic discharge precautions and all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that applicable cleanliness requirements and OH&S safety precautions are fully observed, and an awareness of electrostatic discharge procedures.

Evidence of transferability of skills and knowledge related to enterprise procedures associated with removal and installation is essential. An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace

EVIDENCE GUIDE	
	assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a range of the electrical components/hardware listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance involving aircraft electrical hardware/components that is performed under qualified person guidance in accordance with enterprise procedures and applicable maintenance documentation • work undertaken either autonomously or as part of a team and under the guidance of a qualified person. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that

RANGE STATEMENT	
	which follows a customary or regular course of procedure). All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality. - the application of enterprise procedures associated with basic soldering and crimping skills required for the removal and installation of electrical hardware. - the demonstration of competency in groups that include bolted, soldered, and plug connections.
Electrical hardware may include:	<i>Electrical hardware may include:</i> switches, relays, lamps, terminal blocks, current limiters, circuit breakers, fuses, sockets, potentiometers, capacitors, inductors, magnetic amplifiers, transformers, rheostats, resistors and diodes, miscellaneous sensors and minor components hard mounted throughout the aircraft, busbars, lugs, ferrules, splices, connectors and electrical, electronic cables and looms. Oxygen systems and components, and fuel tank components and integrated hardware are not included.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA239B Fabricate aircraft electrical looms and harnesses

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate II training pathway. It covers the competencies required to fabricate and test, under qualified person guidance, a range of aircraft electrical looms and harnesses. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance publications to fabricate aircraft electrical looms and harnesses under qualified person guidance for general use in electrical systems. Applications include aircraft hangars and workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to fabricate aircraft electrical looms and harnesses	1.1. Appropriate materials, tools and equipment are selected and prepared for the particular task in accordance with applicable maintenance documentation, enterprise procedures and under qualified person guidance. 1.2. Assembly or fabrication jigs, where applicable, are aligned to ensure accurate fabrication of

ELEMENT	PERFORMANCE CRITERIA
	components..
2. Fabricate aircraft electrical looms and harnesses	2.1. Components or parts are fabricated in accordance with qualified person guidance, applicable maintenance documentation and enterprise procedures.
3. Perform routine tests on aircraft electrical looms and harnesses	3.1. Under qualified person guidance test equipment and rigs are used, where applicable, to confirm serviceability of finished components.
4. Complete the fabrication process with regard to aircraft electrical looms and harnesses	4.1. Fabricated components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S practices
- the use of approved fabrication procedures and processes relating to electrical looms, cables, and harnesses
- recognising the integrity/security of electrical component crimps, joints and plug/connector pins.
- fabrication of cables, harnesses and looms, including wire marking, to approved industry standards.
- under qualified person guidance performing testing to assess post construction serviceability according to enterprise procedures

Required knowledge

Look for evidence that confirms knowledge of:

- electrical wire gauges and standards
- wire marking conventions and procedures
- wire terminations, soldering and crimping

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to fabricate aircraft electrical looms, harnesses and cables for general electrical system use while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that the general aspects of material specification and selection, measurement and fabrication be related to specific aircraft component applications to the extent necessary to unambiguously understand expert guidance.

Evidence of knowledge about individual components and their links with systems will be necessary to supplement evidence of ability to interpret qualified person guidance and enterprise procedures to fabricate looms, harnesses and cables before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

Safety precautions applicable to the manufacturing of electrical looms, harnesses and cables are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action, to ensure safety and quality issues are addressed.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of electrical loom, cable and harness fabrication tasks as provided for in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, using tools and equipment specified by

EVIDENCE GUIDE	
	aircraft in the maintenance manuals. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	Application of this unit may relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures and applicable maintenance documentation • work undertaken either autonomously or as part of a team and under the guidance of a qualified person. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure). All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality. • Note that the scope of any fabrication and the procedure to be followed will be provided by the qualified person, and be within the scope of the skills and knowledge included in Unit

RANGE STATEMENT	
	MEA1O9A.
Components or parts	<i>Components or parts include:</i> • Electrical looms, harnesses and cables except for: • data bus cables • co-axial cables • fibre optic cables • fire detection/extinguishing systems • oxygen systems • fuel tanks and integrated hardware

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA240B Use electrical test equipment to perform basic electrical tests

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate II training pathway. It covers the competencies required, under qualified person guidance, to select, set-up and use a range of test equipment to measure voltage and current, and to test continuity, insulation and bonding. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of skills in the use of electrical test equipment under qualified person guidance to measure voltage and current, and to test continuity, insulation and bonding. Applications include aircraft and components both in the hangar and workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare test equipment to perform basic electrical tests	1.1. Appropriate electrical test equipment is selected and confirmed with a qualified person. 1.2. Test equipment is checked for serviceability and applicable leads are fitted where required.

ELEMENT	PERFORMANCE CRITERIA
	1.3. Applicable function and range of measurement is set and confirmed with a qualified person.
2. Test component in accordance with enterprise procedures using electrical test equipment	2.1. Test points and polarity are determined. 2.2. Required parameters are measured with the test equipment. 2.3. Results are recorded in accordance with enterprise procedures, under qualified person guidance.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S practices
- setting up applicable test equipment
- determining test points and polarity
- measuring required parameters
- recording results under qualified person guidance

Required knowledge

Look for evidence that confirms knowledge of:

- the range of relevant electrical test equipment used to measure or test:
 - volts and amps
 - continuity, resistance and insulation
 - bonding.
- identification methods used to confirm test equipment is serviceable and current regarding calibration
- use of selectors and scale adjustment of each item of test equipment to ensure accurate measurement of applicable parameter
- methods of connection of test equipment to components being tested
- methods used to determine polarity and applicable connection points for measurement or testing

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to use electrical test equipment to perform a range of basic measurements and tests while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into all areas that require the use of basic electrical test equipment. It is essential that the general aspects of electrical test equipment identification, preparation for use and safe application to a representative range of measurement and testing tasks are clearly demonstrated. Evidence of knowledge about the preparation and use, in accordance with enterprise procedures, of the range of test equipment used for the measurement and testing tasks listed in the Range of Variables, and of the methods used to identify applicable polarity and connection to components and circuits for required measurement or testing. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of electrical measurement and testing tasks as provided for in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using relevant electrical test equipment as specified in maintenance documentation for a given task, and in accordance with enterprise procedures under expert guidance.
Method of assessment	
Guidance information for	

EVIDENCE GUIDE**assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application of this unit may relate to:

Application of this unit may relate to:

- routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures and applicable maintenance documentation.
- work undertaken either autonomously or as part of a team and under the guidance of a qualified person or direction as required. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure). All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.

Required parameters

Required parameters may include measurement/testing of:

- volts and amps
- continuity, resistance and insulation
- bonding.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA241B Perform aircraft weight and balance calculations as a result of modifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	Engineer at Certificate IV to the granting of a B2 Aircraft Maintenance Engineer Licence or Aircraft Maintenance Specialist Certificate in the Avionics category under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer (Avionics or Mechanical as applicable) at Certificate IV are pre-requisite to the attainment of the elements of competency specified in this unit.

Application of the Unit

Application of the unit	This unit requires application of mathematical formulae to calculate the weight and balance effect of components installed in aircraft during modification incorporation. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Calculate the weight and balance impact of a modification	1.1. The requirement for aircraft weighing is determined. 1.2. The new empty weight of the aircraft is determined and it is ensured that the weight is within the predetermined limits set by the Authorised Airworthiness Representative (AAR). 1.3. The new empty weight centre of gravity of the aircraft is calculated and it is ensured that the centre of gravity is within the predetermined limits set by the AAR. 1.4. Maintenance records are updated with new figures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in calculating the effect on aircraft weight and centre of gravity of components installed during modification incorporation using weight and moment arm data.

Required knowledge

Look for evidence that confirms knowledge of mathematical formulae used to calculate centre of gravity of an aircraft.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use mathematical formulae to calculate aircraft weight and balance given weight and moment arm data and correctly update maintenance records.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft types. Ability to interpret the instructions for configuring and weighing aircraft is critical.

Evidence of transferability of skills and knowledge related to aircraft weight and calculation of centre of gravity is essential. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision without intervention. This shall be established via simulated activities at the CASR Part 147 Maintenance Training Organisation and performance during observed workplace activities.

Context of and specific resources for assessment

Competency may be assessed in the workplace or simulated workplace.

EVIDENCE GUIDE**Method of assessment****Guidance information for assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Aircraft centre of gravity

Aircraft centre of gravity is determined:

- using the weight and moment arm data for a modification

Application

The work can relate to:

- scheduled or unscheduled maintenance and may involve individual activities or supervision of other personnel.

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units

Co-requisite units		

MEA246C Fabricate and/or repair aircraft electrical hardware or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all Avionic Certificate IV training pathways. It is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to fabricate and repair aircraft electrical hardware or parts. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and knowledge of wiring standards and specifications to fabricate aircraft electrical looms, harnesses and cables. Applications include aircraft maintenance hangars and workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components

Prerequisite units		
	MEA260B	Use electrical test equipment

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret specifications and organise materials	1.1. Specifications are interpreted to determine the dimensions and procedure for fabrication. 1.2. Appropriate materials, tools and equipment are selected and prepared for the particular specification requirements
2. Fabricate/repair electrical components or parts.	2.1. Assembly or fabrication jigs, where applicable, are aligned to ensure accurate fabrication of components. 2.2. Components or parts are fabricated in accordance with required specifications.
3. Test fabricated/repaired components or parts.	3.1. Test equipment and rigs are used, where applicable, to confirm serviceability of finished components. 3.2. Fabricated components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OHS practices including the use of PPE and reference to MSDS
- The use of approved repair/fabrication procedures and processes relating to electrical cables, harnesses, antenna leads and aerial components
- Recognising the integrity/security of electrical component crimps, wire wrapping, joints, and plug/connector pins.
- Constructing cables, harnesses and looms, including wire marking, to approved industry standards.
- Performing component testing to assess post construction serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- Component and system operation
- Aircraft wiring specifications and standards
- Standard repair methods for:
 - electrical cables
 - ignition harnesses
 - fire warning system harnesses
 - coaxial cables such as antenna leads
 - aerial components
- Electrical plugs and connectors
- Soldering methods
- Fabrication methods for the above wiring and cables
- Wire marking methods
- Assembly of electrical cables into wiring looms
- Relevant OHS procedures
- How to obtain relevant MSDS
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to fabricate aircraft electrical looms, cables and harnesses in accordance with applicable standards and specifications while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that the general aspects of material specification and selection, measurement and fabrication/manufacture are related to specific aircraft component applications. Evidence of knowledge about individual components and their links with systems will be necessary to supplement evidence of ability to interpret requirements and fabricate components before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of tasks from Groups 1 to 4 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified by aircraft in the maintenance manuals. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for	

EVIDENCE GUIDE**assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Components or parts

Components or parts may include electrical looms, harnesses and cables associated with:

1. Power distribution
2. Ignition
3. Control circuits
4. Signal circuits.

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector**

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA252B Test, align and troubleshoot aircraft synchro and servo system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV training pathways. It covers the competencies required to test, align and troubleshoot aircraft synchro and servo system components. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills, test equipment and knowledge of analogue theory to test, align and troubleshoot synchro and servo components. Applications include synchro and servo system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Test synchro and servo system components	1.1. <i>Synchro and servo system components</i> are correctly prepared and connected to the appropriate test equipment/rig in accordance with approved procedures. 1.2. Components are functionally tested or cycled through the prescribed test procedures in accordance with maintenance manual for evidence of serviceability or malfunction. 1.3. Faults or unserviceabilities are correctly identified and recorded on appropriate maintenance documentation
2. Align synchro and servo system components	2.1. Synchro and servo system components are adjusted in accordance with approved procedures and maintenance manuals until operating within prescribed limits/tolerances.
3. Troubleshoot synchro and servo system components	3.1. Available information from maintenance records and inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting.

ELEMENT	PERFORMANCE CRITERIA
	3.3. Synchro and servo system component faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.4. Determine fault rectification requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- The use of approved repair procedures and processes relating to synchro and servo system components
- Recognising the serviceability state and repair requirements for:
 - synchro/servo system error detection devices
 - DC&AC synchronous components
 - gyroscopic instruments (mechanical, electro-mechanical, vacuum/pressure types)
 - flight control servo devices
- Performing component testing to isolate/confirm faults and assessing post repair/overhaul serviceability
- Correctly aligning synchro and servo system components to prescribed specifications
- Applying logic processes to isolate synchro and servo system component faults

Required knowledge

Look for evidence that confirms knowledge of:

- Component and system operation
- Explaining the basic function and operation of synchro and servo system components to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements and serviceability status post repair or overhaul
- Explaining basic principles/functions, relating to synchro and servo system components and associated with:
 - advanced analogue fundamentals
 - synchronous systems

REQUIRED SKILLS AND KNOWLEDGE

- gyroscopes

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test, align and troubleshoot synchro and servo system components circuitry in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing, aligning and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with synchro and servo system components. Ability to interpret inspection and testing procedures and specifications (allowable limits) and apply them in practice is critical. It is essential that testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to testing, aligning and troubleshooting is essential. This may be demonstrated through application across a range of the synchro and servo system components listed in the Range Statement. The application of testing procedures should also clearly indicate knowledge of system operation. System operation knowledge, the relationship of individual components and the links with other systems (if applicable) will be necessary to supplement evidence of ability to troubleshoot the component within the limits of the fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be

EVIDENCE GUIDE	
	demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of components from each of Group 1 and 2 as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Component testing, alignment and troubleshooting	Component testing, alignment and troubleshooting is assessed in the following Groups: 1. Synchro system components 2. Servo system components
Synchro and servo system components	<i>Synchro and servo system components may come from:</i>

RANGE STATEMENT	
	Air data computers, auto pilot servos, remote position indicators and other similar applications.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities - Complex testing and adjusting of components and when undertaken this will be carried out under supervision.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA260B Use electrical test equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of all Avionic Certificate IV training pathways. It is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to correctly use electrical test equipment. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of skills in the use of electrical test equipment to measure voltage, current, frequency and phase angle, and to test continuity, resistance, insulation and bonding. Applications include aircraft and components both in the hangar and workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select required test equipment.	1.1. <i>System/component test requirements</i> are identified. 1.2. Appropriate test equipment is selected.
2. Prepare test	2.1. Test equipment is checked for serviceability and

ELEMENT	PERFORMANCE CRITERIA
equipment for use	applicable leads are fitted where required. 2.2. Applicable function and range of measurement is selected as required.
3. Test system or component	3.1. Test points and polarity are determined. 3.2. Required parameters are measured with the test equipment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S practices
- Use of selectors and scale adjustment of each item of test equipment to ensure accurate measurement of applicable parameter
- Connection of test equipment to components or circuits
- Determination of polarity and applicable connection points for measurement or testing

Required knowledge

Look for evidence that confirms knowledge of:

- The range of electrical test equipment used to measure or test:
 - volts, amps and power
 - frequency
 - phase angle
 - continuity, resistance and insulation
 - bonding.
- Test equipment construction and calibration, and testing for serviceability

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to use electrical test equipment to perform a range of electrical measurements and tests while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into all areas which require the use of electrical test equipment. It is essential that the general aspects of electrical test equipment selection, preparation for use and safe application to a representative range of measurement and testing tasks are clearly understood. Evidence of knowledge about the selection and use of the range of test equipment used for the measurement and testing tasks listed in the Range Statement, and of the methods used to identify applicable polarity and connection to components and circuits for required measurement or testing. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision in the selection of appropriate items of test equipment and their use to perform the measurements and test in Groups 1 to 5, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using electrical test equipment specified in maintenance documentation. It is also expected that applicable test equipment can be selected on the basis of general trade knowledge where specific test equipment is not specified.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
System/component test requirements	<i>System/component test requirements may include measurement of or testing:</i> 1. Volts, amps and power 2. Frequency 3. Phase angle 4. Continuity, resistance and insulation 5. Bonding.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA261C Use electronic test equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Avionics) AME and workshop training pathways. It covers the competencies required to correctly use electronic test equipment.

Application of the Unit

Application of the unit	This unit requires application of skills in the use of electronic test equipment to measure electronic circuit parameters and test performance. Applications include aircraft components both in the hangar and workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to

Prerequisite units		
		aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select required test equipment	1.1. System/component test requirements are identified 1.2. Appropriate test equipment is selected
2. Prepare test equipment for use	2.1. Test equipment is checked for serviceability and applicable leads are fitted where required 2.2. Applicable function and range of measurement is selected as required
3. Test system or component	3.1. Test points and polarity are determined 3.2. Required parameters are measured with the test

ELEMENT	PERFORMANCE CRITERIA
	equipment

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- methods of connection of test equipment to components or circuits
- methods used to determine polarity and applicable connection points for measurement or testing

Required knowledge

Look for evidence that confirms knowledge of:

- the construction, calibration for use and testing for serviceability of:
 - electronic multimeters
 - phase-angle voltmeters
 - oscilloscopes (dual differential, differential, delayed time base and storage)
 - current probes
 - logic and discrete component testers
 - electronic component substitution boxes and miscellaneous test adapters
- use of selectors and scale adjustment of each item of test equipment to ensure accurate measurement of applicable parameters
- high speed oscilloscope techniques, probe calibration and cathode ray oscilloscope (CRO) safety precautions

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	A person who demonstrates competency in this unit must be able to use electronic test equipment to measure electronic circuit parameters while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into all areas that require the use of electronic test equipment as listed in the Range Statement. It is essential that the general aspects of electronic test equipment selection, preparation for use and safe application to a representative range of measurement and testing tasks are clearly understood. Evidence of knowledge about the selection and use of the range of test equipment listed in the Range Statement, and of the methods used to identify applicable polarity and connection to components and circuits for required measurement or testing. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision, with each item of test equipment in Groups 1 to 6 in the Range Statement having been used to measure electronic circuit parameters and test performance (Group 2 may be omitted if not applicable to enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using electronic test equipment specified in maintenance documentation. It is also expected that applicable test equipment can be selected on the basis of general trade knowledge where specific test equipment is not specified.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electronic test equipment	<i>Test equipment includes:</i> 1. Electronic multimeters 2. Phase-angle voltmeters (where applicable to enterprise) 3. Oscilloscopes (dual differential, differential, delayed time base, storage) 4. Current probes 5. Logic and discrete component testers 6. Electronic component substitution boxes and miscellaneous test adapters
Application	<i>Application of this unit may relate to:</i> • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA262B Modify/repair aircraft component single layer printed circuit boards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV training pathways. It covers the competencies required to modify or repair single layer printed circuit boards. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills including high reliability hand soldering and knowledge of standard practices and techniques in the repair of singlelayer printed circuit boards. Applications include circuit boards from aircraft avionic components that are repaired in aviation workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect single layer printed circuit cards and associated components.	1.1.Relevant maintenance documentation, including component defect reports where applicable, is interpreted and matched by part and serial number. 1.2.Preparation of work area and circuit card assemblies is appropriate to allow for effective detailed inspection of all substrate, circuit tracks, edge connectors and attached components, taking into account any static discharge procedures. 1.3.Circuit card assemblies are visually or physically inspected for physical integrity of substrate, circuit tracks, edge connectors and attached components.. 1.4.Modification status is established to assist in determining repair requirements. 1.5.Defects are correctly identified and reported.
2. Test single layer printed circuit cards and associated components	2.1.Circuit card assemblies are correctly prepared and connected to the appropriate test facility in accordance with approved procedures, or circuit card assemblies are correctly prepared and connected in situ to allow required test procedures to be performed. 2.2.Circuit card assemblies are functionally tested in accordance with normal trade practice and approved maintenance documentation for evidence of serviceability or malfunction.

ELEMENT	PERFORMANCE CRITERIA
	2.3.Circuit card assemblies, attached hardware and electronic components are electronically and/or physically adjusted/aligned in accordance with maintenance manuals or other prescribed procedures.
3. Troubleshoot single layer printed circuit cards and associated components	3.1.Maintenance documentation, physical inspection and test results are used, where applicable, to assist in fault determination. 3.2.Maintenance manual fault diagnosis guides, logical processes and test equipment are used appropriately to ensure efficient and accurate troubleshooting. 3.3.Component faults are located and the causes of the faults are clearly identified and recorded in maintenance documentation, where required. 3.4.Determine rectification requirements.
4. Dismantle single layer printed circuit cards and associated components.	4.1.Conformal/protective coatings are removed from the circuit card assembly to the extent required to effect necessary repairs and in accordance with maintenance manuals, industry or enterprise standards as applicable. 4.2.Appropriate occupational health and safety precautions are observed at all times during maintenance procedure. 4.3.Circuit card assembly is dismantled to the extent necessary to allow repair of all identified faults. 4.4.Parts for processing are correctly tagged and despatched. 4.5.Parts for retention and re-fitment are correctly packaged and stored in accordance with approved procedures to avoid physical and electrostatic damage. 4.6.Parts for disposal are correctly packaged and processed to accord with statutory requirements pertaining to dangerous goods
5. Assemble single layer printed circuit cards and associated components	5.1.Parts removed for access, and replacement parts, are collected ensuring appropriate modification status, component tolerances and assembly configuration is maintained. 5.2.Printed circuit card and associated components are assembled in accordance with maintenance manuals, and all electrical joints meet the approved standard of the equipment manufacturer, or industry standard, as appropriate. Circuit substrate material, circuit tracks, edge connectors and through-hole eyelets are

ELEMENT	PERFORMANCE CRITERIA
	reworked, as necessary, to restore printed circuit card to a serviceable condition. 5.3. Any conformal/protective coatings removed are replaced to the approved standard of the equipment manufacturer, or industry standard, as appropriate. Rework techniques are in accordance with industry approval procedures and relevant occupational health and safety requirements are observed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Applying relevant OH&S practices
- The use of approved repair procedures and processes relating to single and double sided circuit cards
- Recognising unacceptable soldered connections, damage circuit card components, circuit tracks integrity, substrate damage and edge connector condition
- Applying static-safe work area practices
- Reworking unacceptable PCB soldered connections, via acceptable de-soldering and soldering techniques
- Disassembling and assembling PCB cards to approved industry standards and prescribed specifications
- Performing PCB tests using relevant test equipment and processes to isolate PCB track faults and assess serviceability state post repair
- Correctly disassembling, preparing repair area, reworking the card to industry standards, replacing faulted components and assembling card for post repair inspection and testing

Required knowledge

Look for evidence that confirms knowledge of:

- Component operation
- Basic principles/functions relating to electrical and electronic components on PCBs

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair single layer circuit boards in accordance with procedures and standards while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that substrate abrasion and rebuilding techniques, and precautions associated with handling and assembly of electrostatic and temperature sensitive devices are fully observed, understood and complied with. A high level of awareness of safety precautions associated with beryllium materials and use of fluxes and solvents is to be demonstrated.

Evidence of transferability of skills and knowledge related to single layer printed circuit card assembly and repair is essential before undertaking any action. This may be demonstrated through application of the techniques involved across a representative range of circuit card substrate materials and attached components. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of cards with various substrate materials and components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that general and special purpose test equipment found in most routine situations would be used where

EVIDENCE GUIDE	
	appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Circuit card components	<i>Attached components include:</i> • Capacitors; resistors; wires; semiconductors; inductors; transformers; switches; connectors; multi pin ICs; terminal posts and heat-sink materials and will include electrostatic sensitive devices.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities • Single layer printed circuit card assemblies with substrates made from fibreglass, phenolic, composite fibre and epoxy resins and coatings that are from a wide range of aircraft systems
Procedures and standards	Procedures and standards for repair of printed circuit card assemblies, including a range of general engineering hand skills in addition to specific high reliability soldering skills. Standards applicable in a given situation will be defined by equipment manufacturers and/or regulatory authorities and the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA263B Modify/repair aircraft component multi-layer printed circuit boards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic Certificate IV training pathways. It covers the competencies required to modify or repair multi-layer printed circuit boards. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills (including those required to gain access to inner layers and repair outer layers after track repair), including high reliability hand soldering and knowledge of standard practices and techniques in the repair of multi-layer printed circuit boards. Applications include circuit boards from aircraft avionic components that are repaired in aviation workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect multi layer printed circuit cards and associated components.	1.1.Relevant maintenance documentation, including component defect reports where applicable, is interpreted and matched by part and serial number.. 1.2.Preparation of work area and circuit card assemblies is appropriate to allow for effective detailed inspection of all substrate, circuit tracks, edge connectors and <i>attached components</i>, taking into account any static discharge procedures. 1.3.Circuit card assemblies are visually or physically inspected for physical integrity of substrate, circuit tracks, edge connectors and attached components.. 1.4.Modification status is established to assist in determining repair requirements. 1.5.Defects are correctly identified and reported.
2. Test multi layer printed circuit cards and associated components	2.1.Circuit card assemblies are correctly prepared and connected to the appropriate test facility in accordance with approved procedures, or circuit card assemblies are correctly prepared and connected in situ to allow required test procedures to be performed. 2.2.Circuit card assemblies are functionally tested in accordance with normal trade practice and approved maintenance documentation for evidence of serviceability or malfunction.

ELEMENT	PERFORMANCE CRITERIA
	2.3.Circuit card assemblies, attached hardware and electronic components are electronically and/or physically adjusted/aligned in accordance with maintenance manuals or other prescribed procedures.
3. Troubleshoot multi layer printed circuit cards and associated components	3.1.Maintenance documentation, physical inspection and test results are used, where applicable, to assist in fault determination. 3.2.Maintenance manual fault diagnosis guides, logical processes and test equipment are used appropriately to ensure efficient and accurate troubleshooting. 3.3.Component faults are located and the causes of the faults are clearly identified and recorded in maintenance documentation, where required. 3.4.Determine rectification requirements.
4. Dismantle multi layer printed circuit cards and associated components.	4.1.Conformal/protective coatings are removed from the circuit card assembly to the extent required to effect necessary repairs and in accordance with maintenance manuals, industry or enterprise standards as applicable. 4.2.Appropriate occupational health and safety precautions are observed at all times during maintenance procedure. 4.3.Circuit card assembly is dismantled to the extent necessary to allow repair of all identified faults. 4.4.Parts for processing are correctly tagged and despatched. 4.5.Parts for retention and re-fitment are correctly packaged and stored in accordance with approved procedures to avoid physical and electrostatic damage. 4.6.Parts for disposal are correctly packaged and processed to accord with statutory requirements pertaining to dangerous goods
5. Assemble multi layer printed circuit cards and associated components	5.1.Parts removed for access, and replacement parts, are collected ensuring appropriate modification status, component tolerances and assembly configuration is maintained. 5.2.Any conformal/protective coatings removed are replaced to the approved standard of the equipment manufacturer, or industry standard, as appropriate. Rework techniques are in accordance with industry approval procedures and relevant occupational health

ELEMENT	PERFORMANCE CRITERIA
	and safety requirements are observed. 5.3. Printed circuit card and associated components are assembled in accordance with maintenance manuals, and all electrical joints meet the approved standard of the equipment manufacturer, or industry standard, as appropriate. Circuit substrate material, circuit tracks, edge connectors and through-hole eyelets are reworked, as necessary, to restore printed circuit card to a serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Applying relevant OH&S practices
- The use of approved repair procedures and processes relating to multi-layer circuit cards
- Recognising unacceptable soldered connections, damage circuit card components, circuit tracks integrity, substrate damage and edge connector condition
- Applying static-safe work area practices
- Reworking unacceptable PCB soldered connections, via acceptable de-soldering and soldering techniques
- Disassembling and assembling PCB cards to approved industry standards and prescribed specifications
- Performing PCB tests using relevant test equipment and processes to isolate PCB track faults and assess serviceability state post repair
- Correctly disassembling, preparing repair area, reworking the card to industry standards, replacing faulted components and assembling card for post repair inspection and testing

Required knowledge

Look for evidence that confirms knowledge of:

- Component operation
- Basic principles/functions relating to electrical and electronic components on PCBs

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair multi layer circuit boards in accordance with procedures and standards while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that substrate abrasion and rebuilding techniques, and precautions associated with handling and assembly of electrostatic and temperature sensitive devices are fully observed, understood and complied with. A high level of awareness of safety precautions associated with beryllium materials and use of fluxes and solvents is to be demonstrated.

Evidence of transferability of skills and knowledge related to single layer printed circuit card assembly and repair is essential before undertaking any action. This may be demonstrated through application of the techniques involved across a representative range of circuit card substrate materials and attached components. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of cards with various substrate materials and components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that general and special purpose test equipment found in most routine situations would be used where

EVIDENCE GUIDE	
	appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Circuit card components	<i>Attached components include:</i> Capacitors; resistors; wires; semiconductors; inductors; transformers; switches; connectors; multi pin ICs; terminal posts and heat-sink materials and will include electrostatic sensitive devices.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities - Multi layer printed circuit card assemblies with substrates made from fibreglass, phenolic, composite fibre and epoxy resins and coatings that are from a wide range of aircraft systems
Procedures and standards	Procedures and standards for repair of printed circuit card assemblies, including a range of general engineering hand skills in addition to specific high reliability soldering skills and hand skills relating to gaining access to inner layers and progressive rebuilding of outer layers after track repair. Standards applicable in a given situation will be defined by equipment manufacturers

RANGE STATEMENT

	and/or regulatory authorities and the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA264A Remove and install aircraft electrical_avionic components during line maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to remove and install a limited range of aircraft electrical and avionic system components that are within the privileges of the Aircraft Maintenance Engineer A Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of a limited range of aircraft electrical and avionic system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA265A	Remove and install general aircraft electrical hardware

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove aircraft electrical system components	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Electrical component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and packaged in accordance with specified procedures.
2. Remove avionic system components	2.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 2.2. Avionic component removal is carried out in accordance with the applicable maintenance manual. 2.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 2.4. Removed components are tagged and packaged in

ELEMENT	PERFORMANCE CRITERIA
	accordance with specified procedures.
3. Install aircraft electrical system components	3.1. Electrical components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 3.2. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out. 3.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Install avionic system components	4.1. Avionic components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 4.2. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out. 4.3. System is reinstated to correct operational condition in preparation for testing, as necessary. 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- use of maintenance publications in identifying/locating:
 - ovens, boilers and beverage makers
 - aircraft main and APU batteries (lead acid and nickel cadmium) and associated

REQUIRED SKILLS AND KNOWLEDGE

- mounting equipment including related anti-vibration aids and battery temperature monitoring systems
- aircraft internal and external lights
- static wicks
- passenger entertainment system components
- correctly connecting:
 - ovens, boilers and beverage makers
 - aircraft main and APU batteries (lead acid and nickel cadmium) and associated mounting equipment including related anti-vibration aids and battery temperature monitoring systems
 - aircraft internal and external lights
 - passenger entertainment system components
- application of standard procedures including handling of electrostatic sensitive devices

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- procedures for handling electrostatic sensitive devices
- relevant OH&S practices
- the use of applicable maintenance documentation and aircraft publications relating to electrical and passenger entertainment systems
- relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install specified aircraft electrical and avionic components in accordance with applicable maintenance publications while observing all relevant safety precautions.

Critical aspects for assessment and

It is essential that cleanliness requirements and safety

EVIDENCE GUIDE	
evidence required to demonstrate competency in this unit	precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across the range of applicable components listed in the Range Statement. An understanding of the attachment methods, connection of hardware, and the need for functional testing as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under supervision but without intervention on at least one component from each of Groups 1 to 5 as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

RANGE STATEMENT	
wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electrical components	Electrical components include: 1. Ovens, boilers and beverage makers 2. Aircraft internal and external lights, filaments and flash tubes 3. Aircraft main and APU batteries 4. Static wicks
Avionic components include:	Avionic components include: 5. Passenger entertainment system components but excluding public address
Application	Application of this unit may relate to scheduled or unscheduled maintenance
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA265A Remove and install general aircraft electrical hardware

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required for the removal and installation of a range of general electrical hardware and components found in various systems of both fixed and rotary wing aircraft that are within the privileges of the Aircraft Maintenance Engineer A Licence. This unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer A Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills in the removal and installation of electrical hardware. Applications include items of general electrical hardware fitted to fixed or rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove general aircraft electrical hardware	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel

ELEMENT	PERFORMANCE CRITERIA
	safety. 1.2. Removal of electrical hardware is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged, packaged or discarded in accordance with specified procedures.
2. Install general aircraft electrical hardware	2.1. Electrical hardware components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 2.2. Physical installation of electrical hardware is carried out in accordance with the applicable maintenance manual. 2.3. System is reinstated to correct physical condition in preparation for testing, as necessary. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to miscellaneous aircraft electrical hardware and components
- recognition of defects in and deterioration of electrical cables to aircraft industry standards, including crimped and soldered joints
- the correct interpretation of aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- inspection of electrical looms and harness pre and post removal and installation to ensure minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards

REQUIRED SKILLS AND KNOWLEDGE

- positive identification of miscellaneous electrical hardware and/or components in all aircraft systems
- plug connector pin removal and insertion

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- relevant OH&S procedures
- electrical wiring used in aircraft and wire marking
- plug/socket pin numbering and terminal block identification
- cable and loom installation requirements
- crimping tools and crimp terminals
- procedures for removal and insertion of plug connector pins
- electrical fundamentals and related mathematical and physics principles

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use specialist tools and use maintenance publications to remove and install items of general aircraft electrical hardware that are within the privileges of the CASA Aircraft Maintenance Engineer A Licence while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that applicable cleanliness requirements and OH&S safety precautions are fully observed, including awareness of electrostatic discharge procedures.

Evidence of transferability of skills and knowledge related to removal and installation is essential. An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The

EVIDENCE GUIDE	
	work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under supervision but without intervention on each of the connection methods 1 and 2 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Removal and installation of electrical hardware	<i>Removal and installation of electrical hardware involves one or more of the following connection methods:</i>

RANGE STATEMENT	
	1. bolted 2. plug connectors.
Electrical hardware	<i>Electrical hardware includes:</i> • switches, relays, lamps, terminal blocks, current limiters, circuit breakers, fuses, sockets, potentiometers, capacitors, inductors, magnetic amplifiers, transformers, rheostats, miscellaneous sensors and minor components hard mounted throughout the aircraft, busbars, lugs, ferrules, splices, connectors and electrical, electronic cables and looms
Application	Application of this unit may relate to: • Scheduled maintenance up to the level of a weekly check, or to unscheduled maintenance involving component removal and installation.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA270A Lay out avionic systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the basic design and layout to block diagram level of avionic systems. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of basic knowledge of avionic system function, design and layout. Applications include typical electrical and instrument systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in

Prerequisite units		
		aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Lay out to block diagram level an aircraft electrical system	1.1. The <i>functions of aircraft electrical systems</i> are identified. 1.2. <i>Aircraft electrical system components</i> are identified. 1.3. A typical aircraft electrical system is sketched at block diagram level. 1.4. Aircraft electrical system maintenance requirements are identified.
2. Lay out to block diagram level an instrument measuring system	2.1. The various <i>instrument measuring systems</i> are identified. 2.2. <i>Measuring system components</i> are identified. 2.3. A typical instrument measuring system is sketched at block diagram level. 2.4. Measuring system maintenance requirements are identified.
3. Lay out to block diagram level a pressurisation control	3.1. <i>Pressurisation control system components</i> are identified. 3.2. A typical pressurisation control system is sketched at

ELEMENT	PERFORMANCE CRITERIA
system	block diagram level. 3.3. Pressurisation control system maintenance requirements are identified.
4. Lay out to block diagram level an aircraft oxygen system	4.1. The various <i>types of oxygen system</i> are identified. 4.2. <i>Oxygen system components</i> are identified. 4.3. A typical oxygen system is sketched at block diagram level. 4.4. Oxygen system maintenance requirements are identified.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- sketching typical avionic systems at block diagram level

Required knowledge

Look for evidence that confirms knowledge of:

- DC and AC power generation, control and distribution
- aircraft electrical systems and their components
- aircraft electrical system maintenance requirements
- the atmosphere
- use of synchros and servos
- basics of analogue electronics
- aircraft instrument measuring systems and their components
- aircraft instrument measuring system maintenance requirements
- air conditioning and pressurisation systems
- air conditioning and pressurisation system maintenance requirements
- types of aircraft oxygen systems and their applications
- oxygen system maintenance requirements and related cleanliness and safety precautions

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to identify avionic systems and their components, lay out typical systems at block diagram level and identify related maintenance requirements. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed off the job in a training environment equipped to provide exposure to the range of system types and components. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.

Method of assessment

Guidance information for assessment

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to individual or team related activities
Functions of aircraft electrical systems	<i>Functions of aircraft electrical systems may include:</i> • power generation, control and distribution • lighting • electrically operated systems such as doors, flap and landing gear systems • system control (eg hydraulic, pneumatic, air conditioning, propeller control, anti-skid) • warning systems • ice and rain protection • engine systems
Aircraft electrical system components	<i>Aircraft electrical system components may include:</i> • The major components of each of the above systems that would be shown in a block diagram or schematic
Instrument measuring systems	<i>Instrument measuring systems may include:</i> • Engine indication • Transmitter/indicator measuring (pressure, temperature, position) • Fuel quantity indication and flow indication
Measuring system components	<i>Measuring system components may include:</i> • The major components of each of the above systems that would be shown in a block diagram or schematic
Pressurisation control system components	<i>Pressurisation control system components may include:</i> • The major components of a pressurisation control system that would be shown in a block

RANGE STATEMENT	
	diagram or schematic.
Types of oxygen system	<i>Types of oxygen system may include:</i> • Gaseous • Liquid • Chemical
Oxygen system components may include:	<i>Oxygen system components may include:</i> • The major components of each of the above systems that would be shown in a block diagram or schematic.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Avionic engineering

Co-requisite units

Co-requisite units		

MEA271A Lay out avionic flight management systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the basic design and layout to block diagram level of avionic flight management systems. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of basic knowledge of avionic flight management systems function, design and layout. Applications include typical instrument, radio and electronic systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications

Prerequisite units		
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA270A	Lay out avionic systems

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Lay out to block diagram level a flight instrument system	1.1. The various <i>aircraft flight instrument systems</i> are identified. 1.2. <i>Flight instrument system components</i> are identified. 1.3. A typical advanced flight instrument system is sketched at block diagram level. 1.4. Flight instrument system maintenance requirements are identified.
2. Lay out to block diagram level an instrument navigation system	2.1. The various <i>instrument navigation systems</i> are identified. 2.2. <i>Instrument navigation system components</i> are identified. 2.3. A typical instrument navigation system is sketched at block diagram level.

ELEMENT	PERFORMANCE CRITERIA
	2.4. Instrument navigation system maintenance requirements are identified.
3. Lay out to block diagram level an aircraft communication system	3.1. Aircraft communication systems are identified. 3.2. Communication system components are identified. 3.3. A typical communication system is sketched at block diagram level. 3.4. Communication systems maintenance requirements are identified.
4. Lay out to block diagram level an aircraft pulse system	4.1. Aircraft pulse systems are identified. 4.2. Pulse system components are identified. 4.3. A typical pulse system is sketched at block diagram level. 4.4. Pulse system maintenance requirements are identified.
5. Lay out to block diagram level an aircraft radio navigation system	5.1. Aircraft radio navigation systems are identified. 5.2. Radio navigation system components are identified. 5.3. A typical radio navigation system is sketched at block diagram level. 5.4. Radio navigation system maintenance requirements are identified.
6. Lay out to block diagram level an aircraft electronic system	6.1. Aircraft electronic systems are identified. 6.2. Electronic system components are identified. 6.3. A typical electronic system is sketched at block diagram level. 6.4. Electronic system maintenance requirements are identified.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- sketching typical avionic systems at block diagram level

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- the atmosphere
- pitot static systems
- magnetism
- function of gyroscopes
- use of synchros and servos
- basics of analogue electronics
- aircraft instrument systems and their components
- aircraft instrument system maintenance requirements
- radio, navigation and radar basics
- aircraft communication, pulse and radio navigation systems and their components
- communication, pulse and radio navigation system maintenance requirements
- basics of digital electronics
- basic computer architecture
- use of data buses
- automatic flight control systems and their components
- automatic engine control systems and their components
- flight management systems and their components
- display systems and their components
- aircraft electronic system maintenance requirements

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to identify avionic systems and their components, lay out typical systems at block diagram level and identify related maintenance requirements. Competency in this unit cannot be claimed until all prerequisites have been satisfied

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency

EVIDENCE GUIDE	
	in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed off the job in a training environment. equipped to provide exposure to the range of system types and components. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	individual or team related activities
Aircraft flight instrument systems may include:	- airspeed indication - pitot static systems - vertical speed indication - air data - machmeter

RANGE STATEMENT	
	• altimeters including servo and encoding • angle of attack and stall warning/avoidance • turn and slip • directional gyros • artificial horizons • attitude heading reference
Flight instrument system components may include:	• the major components of each of the above systems that would be shown in a block diagram or schematic
Instrument navigation systems may include:	• remote reading gyro compass • direct reading compass • ground proximity warning • flight data recording • inertial navigation
Instrument navigation system components may include:	• the major components of each of the above systems that would be shown in a block diagram or schematic
Aircraft communication systems may include:	• HF radio • VHF radio • UHF radio • satellite communications • communications addressing and reporting • audio integration and intercommunications • cockpit voice recording • emergency location
Communication system components may include:	• the major components of each of the above systems that would be shown in a block diagram
Aircraft pulse systems may include:	• navigation radar • search radar • weapons system radar • radar altimeter • air traffic control transponder • distance measuring equipment • tactical air navigation • doppler • collision avoidance
Pulse system components may include:	• the major components of each of the above systems that would be shown in a block diagram

RANGE STATEMENT	
Aircraft radio navigation systems may include:	• instrument landing • automatic direction finding • VHF omni range • global navigation
Radio navigation system components may include:	• the major components of each of the above systems that would be shown in a block diagram
Aircraft electronic systems may include:	• automatic flight control • automatic engine control • electronic instrument display • flight management
Electronic system components may include:	• the major components of each of the above systems that would be shown in a block diagram

Unit Sector(s)

Unit sector	

Competency field

Competency field	Avionic engineering

Co-requisite units

Co-requisite units		

MEA272A Apply basic scientific principles and techniques in avionic engineering situations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers applying basic scientific principles and techniques to appropriate avionic engineering situations.

Application of the Unit

Application of the unit	This unit requires application of basic avionic scientific principles and techniques as a member of a design and development or similar in support of the design and development of avionic applications. Applications include identifying the range of basic avionic scientific principles and techniques relevant to avionic engineering, selecting avionic principles and techniques for particular applications, applying avionic principles and techniques appropriately to engineering tasks, quoting results appropriately

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Research and identify the range of basic scientific principles and techniques relevant to avionic engineering	1.1. The basic scientific principles relating to avionic engineering are researched and reported on from appropriate <i>sources of information</i> and examination of applications. 1.2. The basic avionic techniques and associated technologies, software and hardware required to implement scientific principles relating to avionic engineering situations are identified.
2. Select basic avionic scientific principles and techniques relevant to particular avionic engineering applications	2.1. For particular <i>avionic engineering</i> situations, the relevant basic avionic scientific techniques and principles can be selected. 2.2. For particular avionic engineering situations, the relevant basic aeronautical techniques and associated technologies, software and hardware can be selected.
3. Apply the relevant basic avionic scientific principles and techniques appropriately	3.1. The <i>basic avionic scientific principles</i> are applied in a consistent and appropriate manner to obtain any required solution. 3.2. Appropriate calculations and coherent units are used in the solution of engineering calculations. 3.3. Significant figures are used in engineering calculations. 3.4. The basic avionic techniques and associated technologies, software and hardware are applied in a consistent and appropriate manner to obtain required

ELEMENT	PERFORMANCE CRITERIA
	solutions.
4. Quote the results of the application of the basic avionic scientific principles and basic techniques correctly	4.1. For applications involving engineering calculations the solution is quoted in an appropriate style. 4.2. For applications not involving engineering calculations the solution is quoted in an appropriate style.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- selecting appropriate basic avionic scientific principles to suit specific applications
- selecting appropriate basic avionic techniques and associated technologies, software and hardware to suit specific applications
- applying basic avionic scientific principles to particular engineering situations
- applying and manipulating appropriate formulas for applications involving engineering calculations
- applying appropriate calculations to engineering situations
- checking the validity of equations is using dimensional analysis
- applying basic avionic techniques and associated technologies, software and hardware in a manner appropriate to the application and identified scientific principles.
- referring solutions to the original aim of the application.
- quoting solutions in appropriate units, using appropriate significant figures.
- quoting limitations of solutions, due to assumptions, scientific principles and techniques used
- presenting solutions referring to the original aim of the application.

Required knowledge

Look for evidence that confirms knowledge of:

- Physics for electronics - complete tasks requiring analysis and application of:
 - units and measurements
 - magnetic force
 - vectors

REQUIRED SKILLS AND KNOWLEDGE

- electric fields and potential
- electric current and resistance
- capacitance
- work, power and energy
- Analogue electronics - complete tasks requiring analysis and application of:
 - negative feedback amplifiers
 - differential amplifiers
 - operational amplifiers
 - amplifier frequency response
 - thermal circuits/heat exchangers
 - active filters
 - fault finding
- Digital electronics - complete tasks requiring analysis and application of:
 - characteristics of digital systems
 - number systems
 - Boolean algebra
 - logic circuits
 - logic families
 - construction and testing techniques
 - flip flop circuits
 - analogue to digital conversion
 - digital to analogue conversion
 - timing and control
 - combinational logic circuits
- Circuit theory - complete tasks requiring analysis and application of:
 - Kirchhoff's Current and Voltage Laws
 - Thevenin's network theorem
 - Norton's network theorem
 - Superposition network theorem
 - Inductance, capacitance and resistance (LCR) series circuit analysis
 - LCR parallel circuit analysis
 - Series and parallel resonance
- Electrical systems - complete tasks requiring analysis and application of:
 - DC and AC circuit design principles
 - generators and motors
 - inverters
 - power supply, transformer, rectifier, filter, regulator
 - solenoids

REQUIRED SKILLS AND KNOWLEDGE

- Aerodynamics - complete tasks requiring analysis and application of:
 - Bernoulli's Theorem
 - The atmosphere
 - Aerodynamic forces (lift, drag, weight, thrust)
 - Stability and control (to a level not requiring the application of calculus)
- Thermodynamics - complete tasks requiring analysis and application of heat transfer principles (conduction, convection, radiation)
- Instruments - complete tasks requiring analysis and application of:
 - airspeed measurement
 - altitude measurement
 - attitude indication
 - measurement of quantity, flow, temperature, pressure and position
- Control concepts and data communications - complete tasks requiring analysis and application of:
 - servo and synchronous systems and components
 - data communication definitions and terminology
- Communications - complete tasks requiring analysis and application of:
 - radio transmission and modulation
 - radio reception
 - microphones, amplifiers and speakers
 - transmission lines and antennas
- Pulse - complete tasks requiring analysis and application of:
 - antennas
 - waveguides
 - transmitters/receivers
 - displays
- Light, sound and vibration - complete tasks requiring analysis and application of:
 - Wave behaviour - standing vs traveling waves, transverse, longitudinal
 - Light - reflection, absorption, refraction, diffraction, spectrum, infrared, visible, ultraviolet, transmission medium, engineering applications
 - Sound - pitch, frequency, intensity (power), decibel scale, "noise dose", spectrum, infrasound, audible, ultrasound, speed, natural frequency, resonance, transmission medium, engineering applications
 - Vibration - sources, balancing, shaft alignment, measurement, damping, engineering applications.
- appropriateness of calculations
- fundamental and derived quantities
- the procedure for carrying out dimensional analysis
- the concept of significant figures

REQUIRED SKILLS AND KNOWLEDGE

- the uncertainty of computations based on experimental data
- the procedures for determining the significance of figures in calculations
- the procedures for estimating errors in derived quantities

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply basic scientific principles and techniques in avionic engineering situations. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace

EVIDENCE GUIDE	
	procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Method of assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying basic scientific principles and techniques in avionic engineering situations or other units requiring the exercise of the skills and knowledge covered by this unit.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Sources of information</i>	Reference texts, manufacturer's catalogues and industrial magazines, international aerospace organisation publications, websites, use of phone, email and fax information gathering.
<i>Avionic engineering</i>	The engineering discipline concerned with the conceptual development, research, design, manufacture, implementation, installation, commissioning and maintenance of aerospace electrical, instrument, radio and electronic systems and components and related test equipment for civil and military applications
<i>Basic avionic scientific techniques and principles</i>	Candidates should apply appropriate basic techniques supported by their mathematical skills and introductory knowledge of scientific principles to design, manufacturing, commissioning and maintenance related tasks and projects relating to:

RANGE STATEMENT

	• electrical systems and related wiring and components (power generation, distribution, control interfaces with hydraulic and pneumatic systems, and caution and warning systems); • mechanical and electro-mechanical flight instruments and indication systems (quantity, pressure, temperature, position) and components; • electronic systems and components (communications, radio navigation, pulse, display, automatic flight control, flight management, and engine management); and • automatic test stations, adapters and software. The applications may require the use of one or two basic avionic scientific principles together with a fundamental mathematical calculation leading to process, resources and system choices from a limited range of options. Basic techniques include basic hand and power tool operations, machining, fitting, welding, moulding, fabricating, wiring and programming techniques.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Engineering science

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA273A Select and test avionic engineering materials

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers selecting appropriate materials and materials and components tests for avionic engineering applications.

Application of the Unit

Application of the unit	Applications of this unit include selecting engineering materials and materials tests, sourcing materials data; ensuring appropriate performance and physical standards for avionic applications; documenting materials tests, ensured calibration standards; interpreting and documenting materials data sheets as appropriate for mass production, batch production, jobbing shop, and prototyping applications. Activities may be performed as a member of a design and development or engineering support team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify classes of materials, based on properties and materials tests relevant to avionic engineering	1.1. Identify <i>classes of materials, based on properties</i>, required for particular <i>avionic engineering</i> applications. 1.2. Relate material properties to common production and construction methods and processes. 1.3. Identify common characteristics, faults or flaws in materials and components or product in particular engineering applications. 1.4. Identify test methods for materials and components or product in particular engineering applications. 1.5. Identify specific industrial test standards/codes, calibration requirements, regulations and authorities related to selection of materials and products for particular engineering applications. 1.6. Investigate the role of <i>Australia's national measurement system</i>.
2. Identify and use sources of information on engineering materials, materials	2.1. Identify and use appropriate <i>sources of information</i> on materials. 2.2. Identify and use appropriate sources of information on methods of testing of properties of materials to ensure suitability for a particular application.

ELEMENT	PERFORMANCE CRITERIA
tests and test equipment including manufacturers' catalogues and websites	2.3. Identify and use appropriate sources of information on materials, materials tests, test calibration, test certificates, regulations, standards, standards councils/societies/authorities/regulatory bodies. Investigate and report on the use of <i>standards and codes</i>. 2.4. Identify and use appropriate sources of information on Materials Safety Data Sheets (MSDS).
3. Specify and implement materials for particular avionic engineering applications.	3.1. Specify and implement methods used to test or obtain the properties of engineering materials.
4. Specify and implement methods used to test or obtain the properties of engineering materials	4.1. Specify and implement tests of materials to ensure quality, safety or suitability for a range of applications. Ensure traceability of measurement standard. 4.2. Obtain Test Sheets / certificates for appropriate materials for applications in accordance with organisational procedures and/or codes and regulations. 4.3. Obtain appropriate Materials Safety Data Sheets (MSDS) for applications in accordance with organisational procedures and/or codes and regulations.
5. Report on and record materials design data and methods and results of materials tests	5.1. Report and record materials selections against design functional requirements in accordance with organisational procedures, codes and regulations. Include environmental impact and sustainability assessment. 5.2. Report and record materials tests and test sheets/certificates in accordance with organisational procedures, codes and regulations. Ensure appropriate calibration and traceability. 5.3. Report and record appropriate Materials Safety Data Sheets (MSDS) for applications in accordance with organisational procedures, codes and regulations.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- selecting class of materials for an application based on comparison of properties for a significant range of materials classes
- selecting class of materials for an application suitable to production and construction methods and processes
- identifying, overcoming or compensating for common characteristics, faults or flaws in materials or product
- obtaining appropriate test sheets / certificates for applications
- obtaining appropriate Materials Safety Data Sheets (MSDS) for application
- completing reports, records and design documentation
- addressing environmental impact and sustainability issues
- reporting, recording and filing test reports and documentation
- implementing materials tests and test sheets/certificates, test calibration and traceability
-
- identifying test methods for materials and components, specific industrial test standards and regulations for particular engineering applications
- identifying test methods for faults or flaws in materials and components or product
- selecting materials following an extensive search of appropriate sources of information including manufacturer's catalogues and websites
- selecting appropriate tests from a range of possible tests, following an extensive search of appropriate sources of information including manufacturer's catalogues and websites
- satisfying applicable standards and regulations for materials and components
- sourcing materials test certificates and using the material properties information from them
- sourcing and implementing Materials Safety Data Sheets
- implementing tests correctly for materials and component faults and properties of materials
- selecting testing methods appropriate to applications

Required knowledge

Look for evidence that confirms knowledge of:

- properties of materials classes
- the effect of material properties on production and construction methods and processes
- the effect of characteristics, faults or flaws in materials on product and processes

REQUIRED SKILLS AND KNOWLEDGE

- test methods for materials and components, specific industrial test standards, regulations and authorities related to particular engineering applications
- test methods for faults or flaws in materials and components or product
- methods of accessing and using alternative information sources
- test procedures and typical applications for tests
- sources and uses of information on materials, materials tests, test certificates, regulations, standards, regulatory bodies and industrial authorities
- methods of accessing Materials Safety Data Sheets (MSDS)
- identification of materials for an application based on comparison of properties of materials
- identification of test for an application based on an understanding of its ability to measure specific material or product properties
- significance of test sheets / certificates to applications
- the need for obtaining and filing test sheets / certificates
- significance of MSDSs and relevance of procedures
- materials selections in relation to design functional requirements
- environmental impact and sustainability assessment
- significance of test reports and documentation to applications
- significance of reporting and recording procedures
- significance of materials tests and test sheets/certificates, test calibration and traceability
- significance of MSDS to applications
- significance of reporting and recording procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to select and test avionic engineering materials. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency

EVIDENCE GUIDE	
	in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Method of assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with selecting and testing aeronautical engineering materials or other units requiring the exercise of the skills and knowledge covered by this unit.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
<i>Classes of materials, based on properties</i>	Classes of materials: - Non-ferrous metals and alloys - Copper, aluminium, zinc, lead, tin and their alloys; ferrous metals - Carbon steels, alloy steels, cast irons; non-metallic composite materials, bearing materials; lubricants; non-metals - timber, ceramics, polymers and fabrics, adhesives, electrical insulation materials; thermal conductors and insulators; electrical conductors, semiconductors and insulators Properties of materials: - Strength, elasticity, plasticity, malleability, toughness, brittleness, fatigue endurance, mouldability, weldability, machinability, formability, resistance to creep and stress relaxation, resistance to degradation (eg. use of plastic fillers to enhance UV resistance), adhesion; electrical, magnetic, thermal, chemical and optical; material structure and effect on properties Other factors: - Corrosion and corrosion protection methods. - The effect of manufacturing and construction processes on material properties. - The effect of property enhancement on design (eg. adhesives plus sintering replacing some forging and machining of gears on shafts) Cost: - Manufacture of material and source of material; typical applications and possibilities
<i>Avionic engineering</i>	The engineering discipline concerned with the conceptual development, research, design, manufacture, implementation, installation, commissioning and maintenance of aerospace electrical, instrument, radio and electronic systems and components and related test equipment for civil and military applications.
<i>Australia's national measurement system</i>	National Standards Commission (legal metrology); Commonwealth Scientific and

RANGE STATEMENT	
	Research Organisation (physical standards); National Association of Testing Authorities, Aust. (Laboratory accreditation); Standards Australia International Ltd (AS standards specifications)
<i>Sources of information</i>	Includes reference texts, manufacturer's catalogues and industrial magazines, websites, use of phone, email and fax information gathering. Includes reference texts, manufacturer's catalogues and industrial magazines, websites, use of phone, email and fax information gathering.
<i>Standards councils/ societies/ authorities/regulatory bodies</i>	AS: Australian; ASTM : American Society of Testing materials; MIL Spec. (US Military Specification); ASME: American Society of Manufacturing Engineers; ISO : International Standards Organisation Regulatory bodies include Civil Aviation Safety Authority, Australian Defence Force, United States Federal Aviation Authority, European Joint Aviation Authority
<i>Standards and codes</i>	NDT and mechanical test standards; chemical test standards; electrical test standards; compliance test standards for components
<i>Tests of materials</i>	Destructive including tensile, compression, impact, hardness, fatigue, corrosion, stress relaxation and creep, peel resistance (adhesives). Non Destructive including Hardness, Ultrasonics, X-ray, Dye Penetrant, Eddy current, Surface Friction, conductivity, heat expansion, photoelastic. Heat capacity refractive index, magnetic hysteresis loop.
<i>Traceability</i>	Test calibrations can be traced back to the relevant base unit in the relevant Measurement System

Unit Sector(s)

Unit sector	

Competency field

Competency field	Engineering science

Co-requisite units

Co-requisite units		

MEA274A Maintain basic light aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the maintenance of electrical systems of the more basic types of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the maintenance of basic aircraft electrical systems and components involving inspection, limited testing and troubleshooting and component removal and installation. Applications include fixed wing aircraft with fixed undercarriage and basic rotary wing aircraft with skids or floats and no powered flight controls powered by either a normally aspirated piston engine or small gas turbine.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic aircraft electrical systems and components	1.1.Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3.DC electrical system is visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4.Defects are correctly identified and reported
2. Test/adjust basic aircraft electrical	2.1.Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
systems	power/system operation 2.2. Electrical system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot basic aircraft electrical systems	3.1.3.1 Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required and in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install basic aircraft electrical system components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Electrical component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Electrical components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out 4.7. System is reinstated to correct operational condition in preparation for testing, as necessary 4.8. Required maintenance documentation is completed

ELEMENT	PERFORMANCE CRITERIA
	and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OH)S practices, including those relating to gas turbine engine high energy ignition units
- using approved maintenance documentation and aircraft publications relating to DC electrical systems
- identifying/locating:
 - DC power generation, regulation, distribution and control systems and components:
 - generators and starter/generators
 - regulators
 - bus bars
 - circuit breakers and fuses
 - wiring
 - piston engine ignition and starting systems and components:
 - magnetos or coils
 - starter motors
 - ignition switches/start switches
 - ignition harnesses
 - low tension wiring
 - spark plugs
 - auxiliary starting devices
 - gas turbine engine ignition and starting systems:
 - starter motors and starter/generators
 - high energy ignition units
 - control units
 - switches
 - batteries and associated mounting equipment, including related anti-vibration aids

REQUIRED SKILLS AND KNOWLEDGE

- motors and actuators in basic DC electrical systems
- correctly connecting DC generators, alternator/rectifier generators and starter/generators
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - DC power generation systems including regulation, distribution and control
 - battery installations
 - piston engine ignition and starting systems
 - gas turbine engine ignition and starting systems (where applicable to the enterprise)
 - internal/external lighting systems, including controls
 - motors and actuators in basic DC electrical systems
- applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions in the above systems
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- DC electrical principles:
 - properties of permanent magnets
 - precautions for the care and storage of permanent magnets
 - properties of electromagnets
 - primary and secondary cells
 - aircraft battery types, construction, care and safety
 - resistor characteristics
 - fuses and circuit breakers
 - fundamental DC circuits
 - inductive circuits
 - capacitive circuits
 - basic fault finding principles
- general construction, operating characteristics and applications for aircraft:
 - DC generators
 - alternator/rectifier generators
 - DC motors including starter motors

REQUIRED SKILLS AND KNOWLEDGE

- starter/generators
- DC actuators (linear and rotary)
- gas turbine high energy ignition system components and related safety precautions
- lighting systems
- the basic layout (block diagram level), function and operation of the systems listed in the Range Statement
- electrical system maintenance requirements and troubleshooting procedures
- relevant OHS practices, including those relating to gas turbine engine high energy ignition units
- Relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic DC electrical systems and remove and install components, including looms, cables and connection hardware, while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with basic aircraft DC electrical systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting and

EVIDENCE GUIDE

	component removal and installation is essential. This is to be demonstrated through application across a range of aircraft electrical systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on electrical looms, cables and connection hardware, and on each system in Range Statement Groups 1 to 4 and on at least one major component/(line replacement unit (LRU) in each case. For Group 5, competency may be demonstrated through the performance of a battery check. Component removal and installation competencies are to be demonstrated on at least one component from each of groups 6 to 11. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Applicable electrical systems	Electrical systems may include: 1. DC power generation, regulation and distribution systems 2. Piston engine and gas turbine engine ignition and starting systems (as applicable to the enterprise) 3. DC electrical systems, such as flaps, including related motors and actuators 4. Aircraft lighting 5. Aircraft main battery
Troubleshooting	Troubleshooting involves the use of fault-finding charts or similar, to line replacement level
Applicable electrical components	Electrical components include: 6. DC generators, and alternator/rectifier generators, and components of related single generator regulation and distribution systems 7. Motors 8. Actuators 9. Piston engine ignition and starting system components 10. Aircraft batteries 11. Aircraft lighting components such as bulbs, lenses, switches and rheostats
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA275A Maintain basic light aircraft instrument systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway It covers the competencies required for the maintenance of instrument systems of the more basic types of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable test equipment to inspect, test and troubleshoot basic aircraft instrument systems and to remove and install components. Applications include light fixed wing aircraft with fixed undercarriage and basic rotary wing aircraft with skids or floats and no powered flight controls powered by either a normally aspirated piston engine or small gas turbine.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic aircraft instrument systems and components	1.1.Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3.Instrument system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4.Defects are correctly identified and reported
2. Test/adjust basic aircraft instrument	2.1.Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
systems and components	power/system operation 2.2. Instrument system is functionally tested in accordance with maintenance manual for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot basic aircraft instrument systems and components	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Instrument system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Determine rectification requirements
4. Remove and install basic aircraft instrument system components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Instrument component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Instrument components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of instrument components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out 4.7. System is reinstated to correct operational condition in preparation for testing, as necessary 4.8. Required maintenance documentation is completed

ELEMENT	PERFORMANCE CRITERIA
	and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using approved maintenance documentation and aircraft publications relating to basic instrument systems
- locating and identifying flight instrument system components comprising:
 - engine system temperature, speed (including mechanical and electrical tachometers)
 - auxiliary direct reading systems including vacuum, fuel storage quantities
 - flight systems including attitude, altitude, air speed and OAT
- locating and identifying direct reading compasses
- correct handling and observance of maintenance precautions relating to gyroscopes, gimbals and pitot/static systems (connections, heating and protrusions)
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - flight instruments
 - pitot/static systems
 - direct reading compasses
 - piston engine and gas turbine engine indication systems
 - electrical systems indication
 - basic fuel quantity indication systems
 - vacuum indication systems
- applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions in the above systems
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- applying occupational health and safety (OHS) requirements relevant to instrument system maintenance

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- handling precautions for electrostatic sensitive devices
- relevant OHS practices
- the basic layout (block diagram level), function and operation of the following systems as listed in the Range Statement:
 - pitot/static systems
 - piston engine and gas turbine engine direct reading indication systems
 - basic fuel quantity measurement systems
- the operating principles of the above systems and associated with:
 - atmospheric conditions; properties and effects on aircraft instruments and systems
 - pressure and temperature sensing elements and their use in aircraft instruments
 - gyroscopes and their use in aircraft instrument systems
 - electrical fundamentals
- instrument construction and operation:
 - instrument groupings, panel layout and construction
 - pitot static instruments (air speed indicators (ASI), vertical speed indicators (VSI) and counter-pointer altimeters), their operation, calibration safe handling and related terminology
 - pitot pressure
 - static pressure
 - altimeter Q code settings:
 - QNH
 - QNE
 - QFE
 - indicated air speed (IAS)
 - true air speed (TAS)
 - vacuum system indication component construction and operation
 - air and electrically powered artificial horizon construction and operation
 - directional gyro construction and operation
 - construction and operation of direct reading engine instruments
 - turn and bank and slip/turn coordinator construction and operation
 - direct reading compass construction and compass calibration
 - piston and gas turbine engine direct reading measuring instruments and temperature indication instruments construction and operation

REQUIRED SKILLS AND KNOWLEDGE

- voltage and current measuring instrument construction and operation
- volumetric fluid quantity system components, construction and operation
- instrument system maintenance requirements and troubleshooting procedures, including pitot/static system leak testing
- relevant maintenance documentation and maintenance publications
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic instrument systems and remove and install components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) and component removal and installation associated with aircraft basic instrument systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of basic aircraft instrument systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and

EVIDENCE GUIDE	
	quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a system and at least one major system component/line replaceable unit (LRU) from each of Groups 1 to 8 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Applicable instrument systems and system components	Instrument systems and components include: 1. Pitot/static systems and components, ASI,

RANGE STATEMENT	
	VSI and counter-pointer altimeters 2. Directional Gyros (DGs) and Artificial Horizons (AHs) (air and electrically driven) 3. Turn and bank and slip/turn coordinators 4. Direct reading compasses 5. Piston engine and gas turbine engine indication system components (direct reading measuring instruments and temperature indication) 6. Electrical systems indication (voltage and current) 7. Basic fuel quantity indication systems and components 8. Vacuum indication components
Troubleshooting	Troubleshooting involves the use of fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA276A Maintain basic aircraft communication and radio navigation systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the limited maintenance of communication and radio navigation systems of the more basic types of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, functionally test and troubleshoot basic communication and radio navigation systems and to remove and install components. Applications include communication and radio navigation systems of fixed wing aircraft with fixed undercarriage and basic rotary wing aircraft with skids or floats and no powered flight controls powered by either a normally aspirated piston engine or small gas turbine

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic communication and radio navigation systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. <i>Communication and radio navigation systems and components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Functionally test	2.1. Aircraft and system are prepared in accordance with

ELEMENT	PERFORMANCE CRITERIA
basic communication and radio navigation systems and components	applicable maintenance manual for the application of power/system operation 2.2. Communication and radio navigation systems are functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. Deficiencies are correctly identified and reported
3. Troubleshoot basic communication and radio navigation systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Communication and radio navigation system faults are located and are correctly recorded in maintenance documentation in accordance with standard operating procedures
4. Remove and install basic radio communication and navigation system components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Communication and navigation system component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Communication and navigation system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out 4.7. System is reinstated to correct operational condition in preparation for testing, as necessary 4.8. Required maintenance documentation is completed and processed in accordance with standard enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved maintenance documentation and aircraft publications relating to the radio frequency and communications system being maintained
- locating and identifying radio communication and navigation system components comprising:
 - high frequency (HF) and very high frequency (VHF) communications
 - very high frequency omni range (VOR), aerial direction finding (ADF) and global navigation systems (GNS)
 - ATC transponders
 - emergency location transmitter (ELT) systems
- locating and identifying applicable radio system antennas
- recognition of system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in:
 - HF and VHF communications systems
 - VOR, ADF and GNS
 - air traffic control (ATC) transponders
 - ELT systems
- applying logic processes, functional testing and visual inspections to isolate malfunctions within the above systems
- functionally testing listed systems to assess post-maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- printed circuit boards
- semiconductors

REQUIRED SKILLS AND KNOWLEDGE

- fibre optics
- handling precautions for electrostatic sensitive devices
- relevant OHS practices
- the use of approved maintenance documentation and aircraft publications relating to radio communication and navigation systems and components
- the general working principles of communication and navigation systems
- explaining the basic system layout (block diagram level), function and operation of:
 - HF and VHF communications systems
 - VOR, ADF and GNS navigation systems
 - ATC transponders
 - ELT systems
- radio frequency and communication system maintenance requirements and basic troubleshooting procedures
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, functionally test and visually troubleshoot basic communication and radio navigation systems and remove and install components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, functional testing and visual troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft basic communication and radio navigation systems and components. It is essential that system functional testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and

EVIDENCE GUIDE

	apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, functional testing and visual troubleshooting is essential. This is to be demonstrated through application across a range of basic aircraft communication and radio navigation systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a system and at least one major system component/LRU from each of Groups 1 to 4 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Applicable systems and components	Communication and radio navigation systems and components include: 1. HF and VHF communication system line replaceable units (LRUs), transmission lines and antennas 2. ADF, VOR and GNS navigation system LRUs, transmission lines and antennas 3. ATC transponders, transmission lines and antennas 4. ELT
Troubleshooting	Troubleshooting involves the use of fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA277A Maintain twin engine aircraft electrical systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies additional to those of MEA202B Remove and install basic aircraft electrical system components and MEA210B Inspect, test and troubleshoot basic aircraft electrical systems and components that are required for the maintenance of the electrical systems of twin piston engine aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit extends the competencies developed in units MEA202B Remove and install basic aircraft electrical system components and MEA210C Inspect, test and troubleshoot basic aircraft electrical systems and components to include the maintenance of additional electrical systems found in twin engine aircraft. Applications include twin piston engine fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect twin engine aircraft electrical systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. DC electrical system is visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust twin engine aircraft electrical systems	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation

ELEMENT	PERFORMANCE CRITERIA
	2.2. Electrical system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot twin engine aircraft electrical systems	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required and in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install twin engine aircraft electrical system components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Electrical component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Electrical components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out 4.7. System is reinstated to correct operational condition in preparation for testing, as necessary 4.8. Required maintenance documentation is completed and processed in accordance with standard enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved maintenance documentation and aircraft publications relating to twin engine aircraft electrical systems
- identifying/locating:
 - DC multi-generator power generation, regulation, distribution and control systems and components, i.e. regulators and bus bars
 - electrical propeller control systems and components, such as feathering and synchronising systems
 - batteries in dual battery installations and associated mounting equipment, including related anti-vibration aids
 - fire warning and extinguishing systems and components
 - identification of halogen (e.g. BCF) fire extinguishers
 - combustion heating systems
 - equipment cooling and ventilation
 - fuel storage and distribution system electrical components
 - master and central warning systems
- correctly connecting DC generators and alternator/rectifier generators in multi-generator systems and paralleling generator output
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in the above systems and system components
- applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions in the above systems
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- system testing procedures and paralleling of generator output
- the basic layout (block diagram level), function and operation of:
 - DC multi-generator and alternator/rectifier generator regulation and distribution systems and components
 - electrical propeller control systems, such as feathering and synchronising systems and system components
 - dual battery systems and associated mounting equipment, including related anti-vibration aids
 - fire warning and extinguishing systems and system components, including regulatory requirements relating to halogen (e.g. BCF) fire extinguishers
 - combustion heating systems and system components
 - equipment cooling and ventilation systems and system components
 - fuel storage and distribution systems and system components
 - master and central warning systems and system components
- maintenance requirements and troubleshooting procedures for the above electrical systems
- relevant OHS practices
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot the DC electrical systems and components of twin piston engine aircraft and remove and install components, including looms, cables and connection hardware, while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with twin piston engine aircraft DC electrical systems and components. It is essential that system testing

EVIDENCE GUIDE

	procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting and component removal and installation is essential. This is to be demonstrated through application across a range of aircraft electrical systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on electrical looms, cables and connection hardware, and on each system in Range Statement Groups 1 to 8 and on at least one major component/line replacement unit (LRU) in each case (Groups 2, 4, 5 and/or 8 may be omitted if they are not applicable to the enterprise). For Group 3, competency may be demonstrated through the performance of a battery check. Component removal and installation competencies are to be demonstrated on at least one component from each of Groups 9 to 16 (Groups 10, 12, 13 and/or 16 may be omitted if they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
DC electrical systems	DC electrical systems may include: 1. DC multi-generator and alternator/rectifier generator regulation and distribution systems and components 2. Electrical propeller control systems, such as feathering systems (where applicable to the enterprise) 3. Batteries in dual battery installations and associated mounting equipment, including related anti-vibration aids 4. Fire warning and extinguishing systems, including handling of halogen fire extinguishers (where applicable to the enterprise) 5. Combustion heating systems (where applicable to enterprise) 6. Equipment cooling and ventilation 7. Fuel storage and distribution systems 8. Master and central warning systems (where applicable to enterprise)

RANGE STATEMENT	
Troubleshooting	Troubleshooting involves the use of fault-finding charts or similar, to line replacement level
Electrical components	Electrical components include: 9. Components of multi-generator regulation and distribution systems 10. Electrical propeller control system components (where applicable to the enterprise) 11. Batteries in dual battery installations and associated mounting equipment, including related anti-vibration aids 12. Fire warning and extinguishing system components (where applicable to the enterprise) 13. Combustion heaters and associated components (where applicable to enterprise) 14. Equipment cooling and ventilation components 15. Fuel storage and distribution system electrical components 16. Master and central warning system components (where applicable to enterprise)
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA210C	Inspect, test and troubleshoot basic aircraft electrical systems and components

MEA278A Inspect, test and troubleshoot instrument display systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot electronic instrument display systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot electronic instrument display systems and components. Applications include fixed and rotary wing aircraft that have electronic instrument display systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect electronic aircraft instrument display systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. <i>Electronic instrument display system</i> components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust electronic aircraft instrument display systems and	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
components	power/system operation 2.2. Electronic instrument display system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot electronic aircraft instrument display systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Electronic instrument display system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of instrument display systems
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) for the range of systems listed in the Range Statement
- interpreting the information presented on instrument display systems
- applying logic processes and using appropriate wiring diagrams and manuals to isolate instrument display system malfunctions
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in

REQUIRED SKILLS AND KNOWLEDGE
the troubleshooting process • applying standard procedures • observing all relevant occupational health and safety (OHS) procedures
Required knowledge
Look for evidence that confirms knowledge of: • standard trade practices relating to tool and test equipment usage and installation/securing of system components • the basic layout (block diagram level) of the systems listed in the Range Statement • the operating principles of the systems listed in the Range Statement and associated with: • electrical and instrument fundamentals relating to multi-function display systems • interpretation of display information and display screen symbol generation • the operation of each listed system and system components • OHS procedures relating to instrument display systems and components • relevant ARINC specifications • relevant maintenance manuals • maintenance requirements and troubleshooting procedures • relevant regulatory requirements and standard procedures, including software management control

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot a range of electronic instrument display systems and components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.
Critical aspects for assessment and evidence required to demonstrate	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely

EVIDENCE GUIDE	
competency in this unit	involvement of supervisors or other trades) associated with aircraft electronic instrument display systems and their components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a range of aircraft instrument and display systems (where display systems are applicable to the enterprise) listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on a system and on at least one major system component of each Groups 1 to 4 (Group 4 may be omitted if not applicable to the enterprise), as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Electronic instrument display systems	Electronic instrument display systems may include: 1. Electronic flight instrument systems (EFIS) 2. Engine indicating and crew alerting systems (EICAS) 3. Electronic centralised aircraft monitor (ECAM) 4. Head-up display (HUD)
Troubleshooting	Troubleshooting involves the use of fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA207C	Remove and install aircraft electronic system components

MEA279A Inspect, test and troubleshoot full authority digital engine control systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot full authority digital engine control (FADEC) systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications and test sets in the inspection, testing and troubleshooting of FADEC systems. Applications include fixed and rotary wing aircraft with engines that are controlled by FADEC systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect FADEC systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. FADEC system is visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test FADEC systems	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 2.2. FADEC system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction

ELEMENT	PERFORMANCE CRITERIA
3. Troubleshoot FADEC systems	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i> 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required and in accordance with standard enterprise procedures 3.5. Rectification requirements are determined

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices, including those relating to engine ground running
- using approved maintenance documentation and aircraft publications relating to the applicable FADEC system
- using test sets to download maintenance data from the FADEC system and interpreting the data
- identifying/locating airframe and engine (including propeller/rotor)-mounted FADEC system components:
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in airframe and engine-mounted FADEC system components
- correctly handling electrostatic sensitive devices
- applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate FADEC system malfunctions
- using built-in test features to confirm post-maintenance serviceability

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- digital electronic theory
- open and closed loop control
- the basic layout (block diagram level), function and operation of FADEC systems
- architecture of FADEC system computers, software and software management
- operation of sensors that input data to FADEC system computers
- built-in test system operation and downloading and interpretation of system data
- relevant regulatory requirements and standard procedures, including software management control
- maintenance requirements and troubleshooting procedures
- relevant maintenance manuals

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot FADEC systems while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with FADEC systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge

EVIDENCE GUIDE	
	related to inspection, testing and troubleshooting and component removal and installation is essential. This is to be demonstrated through application on FADEC systems and components as defined in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on FADEC systems and system components as defined in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
FADEC systems	FADEC systems may include: computers, sensors, interfaces, cockpit controls, data cables and wiring looms that comprise the electronic control system Other engine-mounted related components, such as spark plugs, ignition units, injectors and fuel control units are covered by the applicable engine maintenance units (e.g. MEA313C Inspect, test and troubleshoot piston engine systems and components, MEA314C Inspect, test and troubleshoot gas turbine engine systems and components or MEA353A Maintain basic light aircraft engines and propellers)
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance - individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA207C	Remove and install aircraft electronic system components

MEA280A Inspect, test and troubleshoot flight management systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot flight management systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot flight management system computers, control display units, database units and the interface with flight control and navigation systems. Applications include fixed and rotary wing aircraft that have flight management systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect flight management systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. <i>Flight management system</i> components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test flight management systems	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
and components	power/system operation 2.2. Flight management system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction
3. Troubleshoot flight management systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Flight management system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing and troubleshooting of flight management systems
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) for the system components listed in the Range Statement
- interpreting the information presented on control display units
- applying logic processes and using appropriate wiring diagrams and manuals to isolate flight management system malfunctions
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process
- applying standard procedures

REQUIRED SKILLS AND KNOWLEDGE

- observing all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool and test equipment usage and installation/securing of system components
- electrical principles and digital electronic theory
- the basic layout (block diagram level) of flight management systems
- the operating principles of flight management computers, control display units and database units, including the interface with flight control, engine control and navigation systems
- the interface with Aircraft Communication Addressing and Reporting System and relevant ARINC specifications
- the operation of integral global positioning system (GPS) sensors
- OHS procedures relating to flight management systems and components
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures, including software management control
- maintenance requirements and troubleshooting procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot a flight management system and components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with flight management systems and their components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the

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	system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across the components of a flight management system as listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards, including software management control. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on a system and on at least one major system component of each Group 1 to 5 (Groups 4 and 5 may be omitted if not applicable to the enterprise), as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	Where the flight management system includes integral GPS, consideration may be given to concurrent assessment of MEA234B Inspect, test and troubleshoot aircraft global navigation systems and components.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Flight management systems	Flight management systems may include: 1. Flight management computer 2. Control display unit 3. Database unit 4. GPS sensor (where applicable to enterprise) 5. GPS antenna (where applicable to enterprise)
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA207C	Remove and install aircraft electronic system components

MEA281A Maintain light aircraft AC powered instrument systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the maintenance of AC powered instrument systems of both fixed and rotary wing light aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable test equipment to inspect, test and troubleshoot AC powered aircraft instrument systems, including the power supply, and to remove and install components. Applications include light fixed wing and rotary wing aircraft with piston or turbine engines.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect light aircraft AC instrument systems, power supplies and components	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. AC instrument system and AC power supply components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust light aircraft AC instrument systems,	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of

ELEMENT	PERFORMANCE CRITERIA
power supplies and components	power/system operation 2.2. Instrument system and AC power supply is functionally tested in accordance with maintenance manual for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot light aircraft AC instrument systems, power supplies and components	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Instrument system or power supply faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install light aircraft AC instrument system, and power supply components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Instrument or power supply component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Instrument or power supply components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of instrument or power supply components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out 4.7. System is reinstated to correct operational condition

ELEMENT	PERFORMANCE CRITERIA
	in preparation for testing, as necessary 4.8. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using approved maintenance documentation and aircraft publications relating to AC instrument systems and related AC power supplies
- locating and identifying AC powered instrument system components including:
 - artificial horizons (AH), directional gyros (DG), attitude and heading reference systems (AHRS), servo and encoding altimeters
 - engine system temperature, speed, oil pressure, torque and manifold pressure
 - auxiliary systems, including vacuum, fuel storage quantities and fuel flow
 - remote reading gyro compasses
- locating and identifying AC instrument power supply system components, including:
 - inverters
 - transformer/rectifier units
 - voltage and frequency indication
- correctly handling and observing maintenance precautions for gyroscopes and gimbals
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in AC powered instruments and related power supply, including:
 - flight instruments
 - remote reading gyro compasses
 - piston engine and gas turbine engine indication systems (indicators and transmitters/sensors)
 - fuel quantity and flow indication systems (indicators, probes and transmitters)
 - transmitter/indicator measuring instrument systems (pressure, temperature and vacuum)

REQUIRED SKILLS AND KNOWLEDGE

- AC power supply, including inverters and transformer/rectifier units
- applying logic processes, taking and interpreting system measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions in the above systems
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- applying occupational health and safety (OHS) requirements relevant to instrument and electrical system maintenance

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- handling precautions for electrostatic sensitive devices
- relevant OHS practices
- AC theory:
 - calculations and measurement in AC circuits
 - inductors and inductive reactance
 - transformer operation
 - capacitors and capacitive reactance
 - LCR circuits and resonance
 - passive filters
 - power relationship in reactive circuits
- the basic layout (block diagram level), function and operation of AC powered:
 - flight instruments
 - remote reading gyro compasses
 - piston engine and gas turbine engine indication systems (indicators and transmitters/sensors)
 - fuel quantity and flow indication systems (indicators, probes and transmitters)
 - transmitter/indicator measuring instrument systems (pressure, temperature, vacuum)
 - AC power supply including AC generators, inverters and transformer/rectifier units
- the operating principles of the above systems and associated with:
 - atmospheric conditions - properties and effects on aircraft instruments and systems
 - pressure and temperature sensing elements and their use in aircraft instrument systems
 - gyroscopes and their use in aircraft instrument systems
 - electrical fundamentals

REQUIRED SKILLS AND KNOWLEDGE

- relevant maintenance documentation and maintenance publications
- maintenance requirements and troubleshooting procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot AC powered instrument systems and related power supplies, and remove and install components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) and component removal and installation associated with aircraft instrument systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across a range of AC powered aircraft instrument systems, AC power supplies and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be

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	demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a system and at least one major system component/ line replaceable unit (LRU) from each of Groups 1 to 5 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
AC instrument systems and AC power supply components	AC Instrument system and AC power supply components may include: 1. DG, AH, AHRS and components, servo and encoding altimeters, remote reading gyro compasses and components 2. Piston engine and gas turbine engine

RANGE STATEMENT	
	indication system components 3. Fuel quantity indication and flow indication systems and components 4. Transmitter/indicator measuring instrument systems (pressure, temperature, vacuum) and components 5. Inverters and transformer/rectifier units
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA282A Repair or overhaul aircraft pulse system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul components of aircraft pulse systems. Repair of circuit boards is covered by MEA262B Modify/repair single layer printed circuit boards and MEA263B Modify/repair multi-layer printed circuit boards.

Application of the Unit

Application of the unit	This unit requires application of hand skills, test equipment and knowledge of pulse, analogue and digital theory to repair or overhaul components from aircraft pulse systems. Applications include pulse system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. <i>Pulse system</i> component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Circuitry is correctly prepared and connected to the applicable test equipment and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot pulse system components	2.1. Available information from maintenance records and inspection and test results is used, where necessary, to assist in fault determination 2.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 2.3. Faults are located and the causes of the faults are clearly identified and correctly recorded in

ELEMENT	PERFORMANCE CRITERIA
	maintenance documentation, where required 2.4. Fault rectification requirements are determined
3. Dismantle and inspect pulse system components	3.1. Component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify pulse system components	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust pulse system components	5.1. Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents 5.2. Assembled components are tested and adjusted/aligned in accordance with the applicable maintenance documentation using the appropriate test equipment 5.3. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul manuals, procedures and processes relating to pulse system components

REQUIRED SKILLS AND KNOWLEDGE

- recognising the serviceability state and repair or overhaul requirements for pulse system components
- applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly aligning components listed above to operate within prescribed specifications

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of components of pulse systems to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements and serviceability status post repair or overhaul
- explaining basic principles/functions relating to pulse system components and associated with:
 - advanced analogue fundamentals
 - digital fundamentals
 - AC and DC electrical systems
 - electromagnetic radiation
 - antenna and transmission line (including waveguide) characteristics
 - pulsed radar system operation

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test, troubleshoot and align/adjust circuitry of components from aircraft pulse systems in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate

The underlying skills inherent in this unit should be transferable across a range of testing, aligning and

EVIDENCE GUIDE**competency in this unit**

troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft pulse system component repair and overhaul. Ability to interpret inspection and testing procedures and specifications (allowable limits) and apply them in practice is critical. It is essential that testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to testing, aligning and troubleshooting is essential. This may be demonstrated through application across a representative range of the components listed in Groups 1 to 6 in the Range Statement. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of components from two or more of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.

Method of assessment

Assessment should be made across a sufficient number of components to establish the ability to apply attained skills and knowledge across the full range of pulse system components with the aid of applicable

EVIDENCE GUIDE	
	maintenance manuals and data.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Pulse system components	Pulse system components may be from the following aircraft systems: 1. Weather radar, search radar and weapons system radar 2. Distance measuring equipment (DME) and tactical aerial navigation (TACAN) 3. Doppler navigation 4. Air traffic transponder 5. Radio altimeter 6. Aircraft collision avoidance system (ACAS)
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

MEA283A Repair or overhaul aircraft display, control and distribution system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul components of aircraft control and distribution systems. Repair of circuit boards is covered by MEA262B Modify/repair aircraft component single layer printed circuit boards and MEA263B Modify/repair aircraft component multi-layer printed circuit boards.

Application of the Unit

Application of the unit	This unit requires application of hand skills, test equipment and knowledge of pulse, analogue and digital theory to repair or overhaul pulse system components from aircraft control and distribution systems. Applications include control and distribution system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1.<i>Display, control and distribution system</i> component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2.Circuitry is correctly prepared and connected to the applicable test equipment and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction 1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot display, control and distribution system	2.1.Available information from maintenance records and inspection and test results is used, where necessary, to assist in fault determination

ELEMENT	PERFORMANCE CRITERIA
components	2.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 2.3. Faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 2.4. Fault rectification requirements are determined
3. Dismantle and inspect display, control and distribution system components	3.1. Component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify display, control and distribution system components	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust display, control and distribution system components	5.1. Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents 5.2. Assembled components are tested and adjusted/aligned in accordance with the applicable maintenance documentation using the appropriate test equipment 5.3. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul manuals, procedures and processes relating to aircraft display, control and distribution system components
- recognising the serviceability state and repair or overhaul requirements for components from:
 - digital electronic instruments/display systems
 - digital flight controllers and directors
 - digital automatic flight control system (AFCS)/autopilot systems
 - flight management systems
 - analogue components of control and distribution systems
- applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly aligning components listed above to operate within prescribed specifications
- correctly interpreting digital instrument display indications, information and symbols

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of components as follows to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post repair or overhaul:
 - digital electronic instruments/display system components
 - digital flight controllers and directors
 - digital AFCS/autopilot system components
 - flight management system components
 - analogue components of control and distribution systems
- explaining basic principles/functions, relating to the above systems/components and associated with:
 - advanced analogue fundamentals including video display generation techniques
 - digital fundamentals
- AC and DC electrical systems

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test, troubleshoot and align/adjust circuitry of components from aircraft display, control and distribution systems in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing, aligning and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft display, control and distribution system component repair and overhaul. Ability to interpret inspection and testing procedures and specifications (allowable limits) and apply them in practice is critical. It is essential that testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to testing, aligning and troubleshooting is essential. This may be demonstrated through application across a representative range of the components listed in Groups 1 to 5 in the Range Statement. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision

EVIDENCE GUIDE	
	on a representative range of components from systems listed in Groups 1 to 5 in the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	Assessment should be made across a sufficient number of components to establish the ability to apply attained skills and knowledge across the full range of display, control and distribution system components with the aid of applicable maintenance manuals and data.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Display, control and distribution system components	Display, control and distribution system components may be from the following aircraft systems: 1. Display systems, including electronic flight information systems (EFIS), electronic indicating and crew alerting system (EICAS)

RANGE STATEMENT	
	and electronic centralised aircraft monitoring (ECAM) 2. Automatic flight control 3. Autopilots (digital and analogue) 4. Flight director (digital and analogue) 5. Flight management
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

MEA284A Repair or overhaul aircraft instrument system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul aircraft instrument system components. Repair of circuit boards is covered by MEA262B Modify/repair aircraft component single layer printed circuit boards and MEA263B Modify/repair aircraft multi-layer printed circuit boards.

Application of the Unit

Application of the unit	This unit requires application of hand skills and knowledge of component repair and overhaul procedures relating to aircraft instrument system components. Applications include fixed and rotary wing aircraft instrument system components repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>System components</i> are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot instrument system components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to

ELEMENT	PERFORMANCE CRITERIA
	assist with, or confirm, the fault and rectification requirement 2.4. System component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect instrument system components	3.1. System component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify instrument system components	4.1. System component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust instrument system components	5.1. Assembly of component parts is carried out within specified tolerances and in accordance with the appropriate maintenance documents 5.2. System components are adjusted or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with specified procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul procedures and processes relating to instrument system components
- recognising the serviceability state and repair or overhaul requirements for:
 - mechanical instruments
 - electro-mechanical instruments
 - instrument sensors
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate components faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly disassembling, inspecting component parts, repairing/replacing/modifying component parts and assembling components listed above
- correctly interpreting instrument and display information, symbols and readings

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of the following components to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post repair or overhaul:
 - mechanical instruments
 - electro-mechanical instruments
 - instrument sensors
- explaining basic principles/functions relating to the above components and associated with:
 - AC and DC synchronous systems
 - servomechanisms
 - gyroscopes
 - vacuum and pressure-based indication methods (pitot/static and pressurisation)
 - advanced analogue fundamentals
 - electro-mechanical sensor signal generation

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair and overhaul instrument system components in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with instrument system components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a representative range from within the components listed in the Range Statement.

Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of the components listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools

EVIDENCE GUIDE	
	and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
System components	System components may include: • general instrument components, including mechanical instruments, electro-mechanical instruments and sensors
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

MEA285A Repair or overhaul aircraft radio frequency communication and navigation system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul components of aircraft radio frequency communication and navigation systems. Repair of circuit boards is covered by MEA262B Modify/repair aircraft component single layer printed circuit boards and MEA263B Modify/repair aircraft component multi-layer printed circuit boards.

Application of the Unit

Application of the unit	This unit requires application of hand skills, test equipment and knowledge of analogue and digital theory to repair or overhaul radio frequency components from aircraft communication and navigation systems. Applications include radio frequency communications and navigation system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. <i>Communication and navigation system</i> component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Circuitry is correctly prepared and connected to the applicable test equipment and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot radio frequency communication and	2.1. Available information from maintenance records and inspection and test results is used, where necessary, to assist in fault determination

ELEMENT	PERFORMANCE CRITERIA
navigation system components	2.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 2.3. Faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 2.4. Fault rectification requirements are determined
3. Dismantle and inspect radio frequency communication and navigation system components	3.1. Component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify radio frequency communication and navigation system components	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust radio frequency communication and navigation system components	5.1. Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents 5.2. Assembled components are tested and adjusted/aligned in accordance with the applicable maintenance documentation using the appropriate test equipment 5.3. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul manuals, procedures and processes relating to analogue circuitry
- recognising the serviceability state and repair or overhaul requirements for aircraft radio frequency communication and navigation system components
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly aligning components listed above to operate within prescribed specifications

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of components of radio frequency communication and navigation systems to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post repair or overhaul
- explaining basic principles/functions relating to radio frequency communication and navigation system components and associated with:
 - advanced analogue fundamentals
 - digital fundamentals
 - AC and DC electrical systems
 - electromagnetic radiation
 - antenna and transmission line (including waveguide) characteristics
 - radio transmission/signal propagation and frequency modulation
 - global positioning systems (GPS)
 - satellite communications (industry specific)

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test, troubleshoot and align/adjust circuitry of components from aircraft radio frequency communication and navigation systems in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing, aligning and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft radio frequency communication and navigation system component repair and overhaul. Ability to interpret inspection and testing procedures and specifications (allowable limits) and apply them in practice is critical. It is essential that testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to testing, aligning and troubleshooting is essential. This may be demonstrated through application across a representative range of the components listed in Groups 1 to 11 in the Range Statement. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of components from systems listed in Groups 1 to 11 in the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent

EVIDENCE GUIDE	
	Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	Assessment should be made across a sufficient number of components to establish the ability to apply attained skills and knowledge across the full range of radio frequency components with the aid of applicable maintenance manuals and data.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Communication and navigation system components	Communication and navigation system components may be from the following aircraft systems: 1. VHF communications 2. HF communications 3. UHF communications 4. Satellite communications 5. Emergency location transmitter (ELT) 6. ARINC Communication Addressing and Reporting System

RANGE STATEMENT	
	7. Intercommunication and public address 8. Aerial direction finding (ADF) navigation 9. Very high frequency omni range (VOR) navigation 10. Instrument landing system (ILS) 11. GPS
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

MEA286A Repair or overhaul aircraft electrical/electro-mechanical components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul aircraft electrical and electro-mechanical components.

Application of the Unit

Application of the unit	This unit requires application of hand skills and knowledge of component repair and overhaul procedures relating to electrical and electro-mechanical components. Applications include fixed and rotary wing aircraft components repaired or overhauled in aviation maintenance workshops

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot electrical/electro-mechanical components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4. Electrical/electro-mechanical component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair

ELEMENT	PERFORMANCE CRITERIA
3. Dismantle and inspect electrical/electro-mechanical components	3.1. Component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedure
4. Repair and/or modify electrical/electro-mechanical components	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust electrical/electro-mechanical components	5.1. Assembly of component parts is carried out within specified tolerances and in accordance with the appropriate maintenance documents 5.2. Components are adjusted or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with specified procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul procedures and processes relating to electrical and electro-mechanical components
- recognising the serviceability state and repair or overhaul requirements for:
 - AC and DC motors, generators and alternators

REQUIRED SKILLS AND KNOWLEDGE

- static inverters
- transformer rectifier units (TRU)
- regulators/control units
- actuators
- solenoids and shutoff valves
- engine ignition/starting components
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly disassembling, inspecting component parts, repairing/replacing/modifying component parts and assembling components listed above

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of components listed below to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post repair or overhaul:
 - AC and DC motors, generators and alternators
 - static inverters
 - TRU
 - regulators/control units
 - actuators
 - solenoids and shutoff valves
 - engine ignition/starting components
- explaining basic principles/functions, relating to components listed above and associated with:
 - AC and DC power generation
 - circuit theory
 - analogue fundamentals
 - electro-mechanical interface

Evidence Guide**EVIDENCE GUIDE**

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair and overhaul a range of electrical and electro-mechanical components in accordance with applicable maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with electrical/electro-mechanical components listed in the Range Statement. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a range of aircraft electrical/electro-mechanical components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one component from each Group 1 to 4 as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Electrical/electro-mechanical components	Components may include: 1. Motors, generators and alternators 2. Static inverters, TRU and regulators 3. Actuators, solenoids and shutoff valves 4. Bus bars, circuit breakers, connectors, electrical looms and fans
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers,

RANGE STATEMENT	
	regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware
	MEA260B	Use electrical test equipment

MEA287A Repair or overhaul aircraft oxygen system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required for the repair or overhaul of aircraft oxygen system components.

Application of the Unit

Application of the unit	This unit requires application of hand skills, maintenance publications, test equipment and knowledge of oxygen component maintenance and hygiene requirements to repair and overhaul aircraft oxygen system components. Applications include oxygen system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>System components</i> are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required 1.3. Modification status is clearly established to assist in

ELEMENT	PERFORMANCE CRITERIA
	determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Troubleshoot oxygen system components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4. System component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect oxygen system components	3.1. System component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified 3.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify oxygen system components	4.1. System component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust oxygen system components	5.1. Assembly of component parts is carried out within specified tolerances and in accordance with the appropriate maintenance documents 5.2. System components are adjusted or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with specified procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul procedures and processes relating to oxygen components
- recognising the serviceability state and repair or overhaul requirements for oxygen pressure cylinders, valves, gauges, chemical generators, regulators, masks, pipes, hoses and fittings, and liquid dry breathing oxygen (LDBO) converters
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability
- correctly disassembling, inspecting component parts, repairing/replacing/modifying component parts and assembling oxygen components
- applying product hygiene procedures

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of oxygen components to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post repair or overhaul
- explaining basic principles/functions relating to oxygen components and associated with:
 - pressure sensitive devices (bellows and controllers)
 - vacuum system generation
 - atmosphere and its properties

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair and overhaul aircraft oxygen system components in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions and product hygiene requirements.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with oxygen system components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a representative range of oxygen components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision across Groups 1 to 4 as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work

EVIDENCE GUIDE	
assessment	environment, or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Oxygen system components	System components and related activities may include: 1. Pressure vessels (testing and charging) 2. Regulators, control valves and indicators 3. Chemical oxygen generators 4. Product hygiene
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA288A Repair or overhaul aircraft audio and visual systems and reproducers

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul in-flight passenger entertainment audio and video systems and reproducers.

Application of the Unit

Application of the unit	This unit requires application of hand skills and knowledge of component repair and overhaul procedures relating to aircraft analogue and digital passenger entertainment electronic equipment components. Applications include fixed and rotary wing aircraft components repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Audio and video system and reproducer component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Circuitry is correctly prepared and connected to the applicable test equipment and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is correctly identified and documented
2. Dismantle and inspect audio and video system and reproducer components	2.1. Component parts are dismantled in accordance with maintenance manuals 2.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 2.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified

ELEMENT	PERFORMANCE CRITERIA
	2.4. Parts lists are compiled and processed in accordance with standard enterprise procedures
3. Repair and/or modify audio and video system and reproducer components	3.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 3.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
4. Assemble, test and adjust audio and video system and reproducer components	4.1. Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents 4.2. Assembled components are tested and adjusted in accordance with the applicable maintenance documentation using the appropriate test equipment 4.3. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved repair/overhaul procedures and processes relating to analogue and digital circuitry
- recognising the serviceability state and repair or overhaul requirements for digital electronic interface systems:
 - VCRs
 - video display systems
 - cathode ray tube (CRT) display systems
 - symbol generators
 - audio amplifiers
 - audio selectors
 - voice recorders
 - microphones

REQUIRED SKILLS AND KNOWLEDGE

- head sets
- passenger control units (PCUs)
- tape reproducers (and tape reproduction)
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post repair/overhaul serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining the basic function and operation of audio and visual and reproducer components to enable testing for fault isolation/confirmation to determine repair or overhaul requirements, and serviceability status post repair or overhaul
- explaining basic principles/functions relating to audio and visual and reproducer components and associated with:
 - advanced analogue fundamentals
 - basic logic and semiconductor theory
 - digital fundamentals
 - electro-static discharge (ESD) precautions
 - AC and DC electrical systems
 - video display theory
 - video recorder theory
 - cleaning and maintenance techniques for video and recorder heads
 - aircraft display systems
 - symbol generation
 - vector and raster graphics
 - audio circuit theory
 - sound measurement
 - decibel (dB) level standards
 - audio tape control signals and recording techniques
 - basic logic and semiconductor theory
 - cleaning and maintenance techniques for audio recorder heads

Evidence Guide**EVIDENCE GUIDE**

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to repair and overhaul audio and video system and tape reproducer components in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with audio and video system and tape reproducer components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to repair, modification and overhaul is essential. This may be demonstrated through application across a range of components of the systems listed in the Range Statement. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on an item from each of Groups 1 to 11, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Audio and video systems and reproducers	Audio and video systems and reproducers may include: 1. VCRs 2. Video display systems 3. CRT display systems 4. Symbol generators 5. Audio amplifiers 6. Audio and video selectors 7. Voice recorders 8. Microphones 9. Head sets 10. PCUs 11. Tape reproducers (and tape reproduction)
Application	Application of this unit may relate to:

RANGE STATEMENT	
	• scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment

MEA289A Maintain basic light aircraft avionic systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the maintenance of avionic systems of the more basic types of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the maintenance of basic aircraft avionic systems and components involving inspection, testing and troubleshooting and component removal and installation. Applications include basic fixed wing and rotary wing aircraft where the avionic systems are limited to very high frequency (VHF) communications, basic audio system, aerial direction finding (ADF) and very high frequency omni range (VOR) radio navigation systems, stand-alone global navigation system (GNS) and air traffic control (ATC) transponder.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic aircraft avionic systems and components	1.1.Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements 1.2.Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3.Avionic systems are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4.Defects are correctly identified and reported
2. Test/adjust basic aircraft avionic	2.1.Aircraft and systems are prepared in accordance with applicable maintenance manual for the

ELEMENT	PERFORMANCE CRITERIA
systems	application of power/system operation 2.2. Avionic systems are functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot basic aircraft avionic systems	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required and in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install basic aircraft avionic system components	4.1. System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Avionic component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Removed components are tagged and packaged in accordance with specified procedures 4.5. Avionic components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life 4.6. Physical installation of avionic components is performed in accordance with the applicable maintenance manual 4.7. System is reinstated to correct operational condition in preparation for testing and calibration or adjustment, as necessary 4.8. Required maintenance documentation is completed and processed in accordance with standard enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved maintenance documentation and aircraft publications relating to the avionic system being maintained
- locating and identifying avionic system components comprising:
 - VHF communications systems
 - VOR and ADF navigation systems
 - basic audio systems
 - stand-alone GNS systems
 - ATC transponders
 - emergency location transmitter (ELT) systems
- locating and identifying applicable antennas
- recognising system and component defects/external damage, correct installation, attaching hardware (including cabling/harnesses/transmission lines) and security in the systems listed above.
- applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within the above systems
- testing listed systems to isolate system faults and assess post-maintenance serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware, and plugs
- handling precautions for electrostatic sensitive devices
- the basic layout (block diagram level), function and operation of:
 - VHF communications systems
 - VOR and ADF navigation systems
 - basic audio systems

REQUIRED SKILLS AND KNOWLEDGE

- stand-alone GPS systems
- ATC transponders
- ELT systems
- basic principles/functions, relating to the above systems and associated with:
 - electromagnetic radiation and propagation
 - basic AC and DC circuit theory
 - printed circuit boards
 - digital fundamentals
 - analogue fundamentals
 - transmitter and receiver principles
 - pulse
 - antenna characteristics
 - transmission line characteristics
 - fibre optic communications
- maintenance requirements and troubleshooting procedures
- applicable maintenance data and manuals
- relevant OHS practices
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic aircraft avionic systems and remove and install system components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with basic aircraft avionic systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the

EVIDENCE GUIDE	
	system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting and component removal and installation is essential. This is to be demonstrated through application across a range of avionic systems and components listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on each system in Range Statement Groups 1 to 7 and on at least one major component/line replacement unit (LRU) in each case. Component removal and installation competencies are to be demonstrated on at least one component from each of Groups 8 to 12. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Avionic systems	Avionic systems may include: 1. VHF communication 2. Basic audio systems, such as intercom and audio selection 3. ADF 4. VOR 5. Stand-alone GPS 6. ATC transponder 7. ELT
Troubleshooting	Troubleshooting involves the use of test sets, maintenance data and fault-finding charts or similar, to line replacement level
Avionic components	Avionic components include: 8. Transmitters and receivers 9. Antennas and antenna cables 10. Control boxes and frequency selectors 11. Speakers 12. Switches
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA290A Fit avionic modification sheetmetal components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required for the performance of sheetmetal work associated with the incorporation of avionic modifications on small aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications and modification documentation to perform sheetmetal work associated with avionic modifications being incorporated on small aircraft. Applications include small fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to fit avionic modification sheetmetal components	1.1. Applicable sheetmetal components are identified in accordance with applicable modification instructions and maintenance documentation 1.2. All required materials and equipment are selected and organised in accordance with the applicable

ELEMENT	PERFORMANCE CRITERIA
	modification instructions and maintenance documentation
2. Fit avionic modification sheetmetal components	2.1. Sheetmetal components are fitted in accordance with the modification instructions, ensuring that aircraft standard practices are used and standard process requirements are carried out 2.2. Work area is cleaned of all waste material
3. Complete modification activities	3.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including the use of material safety data sheets (MSDS) and personal protective equipment (
- using enterprise procedures, approved maintenance documentation and aircraft publications relating to aircraft sheetmetal components
- identifying various aircraft metals used for sheetmetal components and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- handling and storing aircraft metals used for sheetmetal components, including sealing agents, to industry standards
- identifying aircraft sheetmetal assembly fasteners (metal and non-metallic) by interpretation of markings, numbering systems, size, shape and colour
- correctly interpreting, modification drawings and hand sketches
- using appropriate hand tools and machines to fit avionic modification sheetmetal components to the aircraft
- freehand precision hole generation
- applying corrosion prevention techniques during component fitment
- restoring sealing and surface finishes

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- aircraft sheetmetal component construction principles
- identification of primary, secondary and tertiary structure
- aircraft sheetmetal assembly fasteners, their characteristics and identification
- fits and clearances for fasteners
- fitting methods for fasteners
- use of grip pins
- corrosion of aircraft structure and its prevention
- application of surface finishes
- relevant OHS procedures
- how to obtain MSDS
- use of personal protective equipment

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications and modification instructions to correctly fit small aircraft avionic modification sheetmetal components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices, and processes associated with assembly.

Evidence of knowledge about enterprise procedures relating to avionic modification incorporation and practices relating to associated sheetmetal component installation will be necessary to supplement evidence of ability to fit a range of sheetmetal components in a specific application.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of

EVIDENCE GUIDE	
	competency are being achieved under qualified person guidance on the range of sheetmetal components listed in Groups 1 to 4 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Sheetmetal components	Sheetmetal components may include: 1. Doublers for the installation of antennas 2. Brackets for the installation of avionic system components 3. Racks for components, such as transmitters/ receivers 4. Hardware for the support of antenna cables and system electrical wiring

RANGE STATEMENT	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA291A Inspect, test and troubleshoot fixed wing single axis autopilot systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Avionic Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot single axis autopilot systems and components of fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot fixed wing single axis autopilot systems and components. Applications include fixed wing aircraft that have single axis autopilot systems, including those with radio navigation system interfaces.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	
	MEA207C Remove and install aircraft electronic

Prerequisite units		
		system components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect fixed wing single axis autopilot systems and components	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. Single axis autopilot system and components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust fixed wing single axis autopilot systems and	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation

ELEMENT	PERFORMANCE CRITERIA
components	2.2. Autopilot systems are functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3. Troubleshoot fixed wing single axis autopilot systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i> 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Autopilot system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices
- using approved maintenance documentation and aircraft publications relating to the single axis autopilot system being maintained
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
 - autopilot system components
 - radio navigation system interfaces
- applying logic processes, taking and interpreting system measurements, and using test equipment and appropriate wiring diagrams and manuals, to accurately and effectively isolate system malfunctions
- testing the system to isolate system malfunctions and assess post-maintenance

REQUIRED SKILLS AND KNOWLEDGE
serviceability
Required knowledge
Look for evidence that confirms knowledge of: • component attachment methods • the basic layout (block diagram level), function and operation of: • autopilot system components • interface with radio navigation systems • autopilot system maintenance requirements and troubleshooting procedures • relevant OHS practices • basic principles/functions, relating to the listed systems and associated with: • basic AC and DC circuit theory • digital fundamentals • analogue fundamentals • fixed wing flight theory • inner and outer loop control • relevant maintenance manuals • relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot fixed wing single axis autopilot systems and components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with fixed wing aircraft single axis autopilot systems and components. It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the system being maintained

EVIDENCE GUIDE	
	are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across an autopilot system and its components. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on an autopilot system and its components. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment, would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Troubleshooting	<i>Troubleshooting</i> involves the use of fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA301C Perform aircraft flight servicing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Avionic and Mechanical Certificate IV AME training pathways. It covers the competencies required to perform maintenance and system replenishment activities associated with flight servicing. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the performance of pre and post-flight servicing activities and the application of aircraft ground handling procedures. Applications include the performance of flight servicing on both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for flight.	1.1. Aircraft is positioned as required. 1.2. Ground locks, aircraft support and safety devices and covers are removed and stowed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	<i>maintenance documentation.</i> 1.3. Aircraft tie-down devices are removed and stowed/stored
2. Inspect aircraft and systems.	2.1. Preparation of the aircraft and systems is appropriate to allow for proper inspection. 2.2. Aircraft and systems are visually or physically checked for external signs of defects in accordance with maintenance documentation
3. Replenish aircraft systems.	3.1. Fluid level checks and replenishments are carried out in accordance with maintenance documentation requirements. 3.2. Maintenance of gaseous levels (nitrogen and compressed air) is carried out in accordance with maintenance documentation requirements. 3.3. Role equipment/components requiring pre-flight replacement are changed as required by maintenance documentation. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Ground handling of aircraft
- Use of hand skills and tools to perform flight servicing activities
- Correct installation and securing of aircraft hardware
- Location, use and correct stowage of aircraft safety and security equipment (includes ground locks, covers, support and safety devices and tie-down devices)
- Application of ground power (where applicable)
- Inspection of structure for damage and deterioration
- Recognition of external signs of component damage, leakage and security in aircraft systems
- Recognition of visual signs of damage, leakage and security with regard to engines

REQUIRED SKILLS AND KNOWLEDGE

- and propellers (where applicable)
- Refuelling the aircraft with the correct type, quantity and distribution of fuel
- Checking and replenishing fluid level using the correct fluids
- Recharging of gaseous levels using the correct support equipment and procedures
- Checking fire protection systems (where applicable) for correct gas charge levels and portable fire extinguishers for serviceability and correct stowage
- Replacing role equipment requiring pre-flight replacement
- The use of maintenance data and manuals to determine flight servicing requirements and procedures
- Application of standard procedures
- Observance of all relevant occupational health and safety (OHS) procedures including the use of Material Safety Data Sheets (MSDS) and items of personal protective equipment (PPE)

Required knowledge

Look for evidence that confirms knowledge of:

- Standard trade practices relating to tool usage and installation/securing of aircraft hardware
- The aircraft structure to the extent required to be able to recognise typical types of structural damage and deterioration during flight servicing activities
- System layout, operation and typical external signs of faults to the extent required to perform flight servicing activities
- Aircraft flight servicing requirements
- Ground de-icing of aircraft
- Aircraft ground handling procedures including towing and marshalling
- Aircraft safety and security equipment including:
 - ground locks
 - wheel chocks
 - covers
 - support and safety devices
 - tie-down devices and picketing
- Types and characteristics of fuels and fuel additives
- Types and characteristics of lubricants
- Types and characteristics of hydraulic fluids
- OHS procedures relating to flight servicing activities
- How to obtain MSDS
- Selection and use of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform flight servicing activities on the occasions as listed in the variables that are relevant to the organisation in accordance with relevant maintenance documentation, while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the specific aspects of the aircraft flight servicing are checked to ensure quality and safety standards are fully observed, understood and complied with. Safety precautions applicable to the system being maintained are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action.

Evidence of knowledge of system operation, recognition of defects and completion of documentation, the relationship of individual components and the links with other systems will be necessary to the extent required for completion of flight servicing before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on the flight servicings listed in Groups 1 to 4 of the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Flight servicing activities	Flight servicing activities may be performed during: 1. Preparation for flight following maintenance 2. Before flight servicing 3. After flight servicing 4. Turn around servicing
Maintenance documentation	<i>Maintenance documentation may include:</i> • Maintenance manuals • Servicing schedules • Applicable airworthiness regulations • Aircraft maintenance program
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA302C Remove and install aircraft hydro-mechanical and landing gear system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway and may also be part of a Structures Certificate IV training pathway. It covers the competencies required to remove and install aircraft hydro-mechanical system and landing gear components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the removal and installation of aircraft hydro-mechanical system and landing gear components. Applications include hydro-mechanical system components and landing gear components fitted to both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove hydro-mechanical system components.	1.1. <i>Hydro-mechanical system</i> is rendered safe and prepared in accordance with the applicable maintenance manual, including fitment of isolation

ELEMENT	PERFORMANCE CRITERIA
	tags where necessary to ensure personal safety. 1.2. Removal of hydro-mechanical components is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is accurately completed and correctly processed. 1.4. Removed components are tagged, sealed and packaged in accordance with specified procedures.
2. Remove landing gear components.	2.1. The aircraft is jacked as specified in the maintenance manual for landing gear component removal. 2.2. Removal of components is carried out in accordance with the applicable maintenance manual. 2.3. Required maintenance documentation is accurately completed and correctly processed. 2.4. Removed components are tagged, sealed and packaged in accordance with specified procedures.
3. Install hydro-mechanical system components.	3.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 3.2. Component installation is carried out in accordance with the applicable maintenance manual. 3.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Install landing gear components.	4.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 4.2. Component installation is carried out in accordance with the applicable maintenance manual. 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- Use of hand skills and tools to remove and install hydraulic and fuel system components
- Jacking of the aircraft as required for landing gear component removal and installation
- Correct installation and securing of aircraft hardware
- Use of hand skills and tools to remove and install landing gear components and the correct handling of heavy components
- The use of maintenance manuals to prepare the aircraft for component removal and installation and correct interpretation of removal and installation instructions
- Application of standard procedures
- Observance of all relevant occupational health and safety (OHS) procedures including the use of Material safety Data Sheets (MSDS) and relevant items of personal protective equipment (PPE)

Required knowledge

Look for evidence that confirms knowledge of:

- Standard trade practices relating to tool usage and installation/securing of aircraft hardware
- Hydraulic fluids (mineral and synthetic) and handling precautions
- Hydraulic seal types and applications
- How to locate and correctly remove and install components of hydraulic systems
- Aircraft fuels and handling precautions
- Fuel seal types and applications
- How to locate and correctly remove and install fuel system components
- Electrical circuit isolation and plug removal and installation
- How to jack the aircraft for landing gear component removal and installation
- How to locate and correctly remove and install landing gear components including the handling of heavy components
- OHS procedures relating to hydraulic systems, fuel systems and landing gear components
- How to obtain MSDS
- The selection and use of items of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install a range of hydraulic and fuel system and landing gear components in accordance with relevant maintenance manual instructions while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that system cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types, but must cover a sufficient range of tasks to demonstrate familiarity with attachment methods, connection hardware and couplings peculiar to each type of system, and of safe handling of heavy components. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on each type of system and on at least one component of each group listed in the Range Statement, as follows:

- Hydraulic systems - preparation of a system for safe component removal and replacement of at least one component from each of hydro-mechanical system components 3 and 5
- Fuel systems - preparation of a system for safe component removal and replacement of at least one

EVIDENCE GUIDE	
	component from each of 4 and 5 Landing gear components - one each of 6 to 8. Coverage of brakes and struts/oleos are not required where the aircraft is rotary wing and is fitted with skids or floats. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hydro-mechanical systems and components	<i>Hydro-mechanical systems include:</i> - Hydraulic systems - Fuel systems <i>Components of hydro-mechanical systems include:</i>

RANGE STATEMENT	
	3. Hydraulic accumulators, filters, reservoirs, valves, pumps, motors, actuators, regulators, direct reading gauges 4. Fuel system filters, valves, pumps, rigid and flexible storage cells/tanks 5. Rigid and flexible pipelines, hoses and fittings
Landing gear components	<i>Landing gear components include:</i> 6. Wheel assemblies or skids 7. Brake units 8. Struts/oleos
Electrical interface	The work can include associated electrical loom terminations and/or plugs
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation Maintenance

Co-requisite units

Co-requisite units		

MEA303C Remove and install aircraft pneumatic system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Mechanical AME Certificate IV training pathways and may also be part of a Structures Certificate IV training pathway. It covers the competencies required for the removal and installation of components in pneumatic systems of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install aircraft pneumatic system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove pneumatic system components.	1.1. Pneumatic system is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to

ELEMENT	PERFORMANCE CRITERIA
	ensure personnel safety. 1.2. Removal of components is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged, sealed and packaged in accordance with specified procedures.
2. Install pneumatic system components.	2.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 2.2. Installation is carried out to pneumatic system in accordance with the applicable maintenance manual. 2.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - Locate and correctly remove and install components in pneumatic systems, including fire-extinguishing systems
 - Locate and correctly remove and install components in air cycle air conditioning systems
 - Locate and correctly remove and install components in pressurisation systems
 - Correctly remove and install rigid and flexible pipelines
 - Correctly remove and install ducting

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- Component attachment methods
- Connection hardware and couplings
- Standard trade practices relating to tool usage and installation/securing of aircraft hardware
- How to locate and correctly remove and install components of:
 - pneumatic systems
 - air cycle air conditioning system components
 - pressurisation system components
 - fire extinguishers including the ozone-depleting properties of halons and special precautions and handling requirements for BCF fire extinguishers
- Electrical circuit isolation and plug removal and installation
- OHS procedures relating to pneumatic, air conditioning and pressurisation systems
- How to obtain MSDS
- The selection and use of items of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures including those relating to the handling and control of halon fire extinguishers

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install aircraft pneumatic system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that system cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a number of

EVIDENCE GUIDE	
	aircraft systems or aircraft types, but must cover a sufficient range of tasks to demonstrate familiarity with attachment methods, connection hardware and couplings peculiar to each type of system, and of safe handling of heavy components. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Pneumatic components	<i>Components may include:</i> 1. Filters, valves, pumps, motors, actuators, regulators 2. Gauges (direct reading), temperature sensors, pressurisation controllers, temperature controllers 3. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers 4. Rigid and flexible pipelines, hoses and fittings 5. Ducting 6. Fire extinguishers including those containing halons (e.g. BCF)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities • Pneumatic systems, including pressurisation, air cycle air conditioning systems and fire extinguishing systems
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA304C Remove and install non-pressurised aircraft structural and non-structural components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It may also be part of a Structures Maintenance Certificate IV training pathway. This unit covers the competencies required for the removal and installation of both structural and non-structural components of non-pressurised fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance publications to remove and install structural and non-structural components from non-pressurised aircraft. Applications include both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical and landing gear

Prerequisite units	
	system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove components	1.1. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage to aircraft or component during component removal. 1.2. Component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Where applicable, removed components are tagged and prepared for transport in accordance with specified procedures.
2. Install components.	2.1. Structural and/or non-structural components to be installed are checked to confirm correct part numbers, serviceability and modification status. 2.2. Component installation is carried out in accordance with the applicable maintenance manual.

ELEMENT	PERFORMANCE CRITERIA
	2.3. Support/safety equipment is removed at an appropriate time to ensure personnel safety and freedom from structural damage. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - remove and install structural and non-structural components
 - remove and install aircraft interior fittings
 - remove and install doors, door seals, windows and transparent panels
 - checking and adjusting all doors and access panels including locking mechanisms
 - remove and install emergency equipment.

Required knowledge

Look for evidence that confirms knowledge of:

- Structural and non-structural component methods of construction and attachment, faying surface treatment and fuel tank sealing
- Non-pressurised fuselage aircraft doors, related seals and window and transparent panel construction, attachment methods and sealing
- Aircraft interior fittings (trim, linings, seats, floor panels, and so on) construction and attachment methods
- The location and attachment or stowage methods for emergency equipment
- Relevant OHS practices
- How to obtain MSDS
- Use of PPE
- Relevant maintenance manuals

REQUIRED SKILLS AND KNOWLEDGE

- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use maintenance manuals and applicable tools to remove and install removable structural and non-structural components from non-pressurised aircraft while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that shoring, trestling and lifting requirements and safety precautions applicable to the structure being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a representative range of the areas listed in the Range Statement. An understanding of component handling, attachment methods, adjustment and sealing as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each Group 1 to 6, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work environment

EVIDENCE GUIDE	
assessment	or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Removable components of structure	Are those that are installed using bolts and/or screws. Where component removal and installation requires the removal and installation of rivets the applicable unit is either: MEA311B, 339A or MEA404B. <i>Components may include:</i> 1. Removable components of wings, tail booms, pylons, empennage, skids, fairings, nacelles 2. Removable components or sections of non-pressurised fuselages 3. Non-pressurised fuselage entry, cargo, access doors and associated seals (including checking and adjustment of all doors and access panels and associated locking mechanisms) 4. Non-pressurised fuselage windows and

RANGE STATEMENT	
	transparent panels 5. Where applicable, trim panels, linings, seats, cabin equipment and consoles, floor panels, coverings 6. Applicable emergency equipment (including passenger escape systems, life jackets, rafts, location transmitters, beacons, crew and passenger seat restraints)
Sealant removal and application	The removal and application of faying (contact or overlapping) surface and fuel tank sealants is included, where applicable
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA305C Remove and install aircraft fixed wing flight control system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It may also be part of a Structures Maintenance Certificate IV training pathway. It covers the competencies required for the removal and installation of flight control system components fitted to fixed wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install aircraft flight control system components. Applications include fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	
	MEA302C Remove and install aircraft hydro-mechanical and landing gear

Prerequisite units		
		system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove fixed wing flight control system components.	1.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2. Fixed wing <i>flight control system component</i> removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is accurately completed and correctly processed. 1.4. Removed components are tagged, sealed and packaged in accordance with specified procedures.
2. Install fixed wing flight control system components.	2.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 2.2. Mass balance of control surfaces to be installed is checked in accordance with the applicable maintenance manual, if required. 2.3. Installation is carried out in accordance with the

ELEMENT	PERFORMANCE CRITERIA
	applicable maintenance manual. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices
- The use relevant maintenance documentation and aircraft manuals to:
 - remove flight control surfaces
 - check the mass balance of control surfaces where required
 - install flight control surfaces
 - remove power flight control system components
 - install power flight control system components
 - remove mechanical flight control system components
 - install mechanical flight control system components

Required knowledge

Look for evidence that confirms knowledge of:

- Flight control surface and system component attachment methods
- Connection hardware and couplings
- Electrical circuit isolation and plug removal and installation
- Requirements for balancing of control surfaces
- Flight control system rigging requirements
- Requirements for independent inspection of work performed on flight control systems and components
- Relevant OHS practices
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install fixed wing aircraft flight control system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that safety precautions applicable to the fixed wing flight control system being maintained are fully observed, understood and complied with (especially flight control system inter-relationships with other systems where applicable). An awareness of dual inspection requirements associated with work on flight controls and systems must also be demonstrated.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through removal and installation of a representative range of the fixed wing flight control system components listed in the Range Statement. An understanding of component attachment methods and the need for adjustment or rigging and system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground

EVIDENCE GUIDE	
	support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Flight control system components	<i>Flight control system components may include:</i> 1. Ailerons, elevators, rudders, trim tabs, speed brakes, spoilers, flaps and slats 2. Actuators - mechanical, hydraulic, pneumatic or electric 3. Mechanical flight control components (cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, chains, sprockets, control sticks, wheels or columns, trim wheels or handles, rudder pedals)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA306C Remove and install engines and engine system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required for the removal and installation of both fixed and rotary wing aircraft engines and engine system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install gas turbine or piston engines and engine system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical and landing gear

Prerequisite units	
	system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove engine	1.1. Aircraft is prepared and supported and rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during engine removal. 1.2. Removal is carried out in accordance with the applicable maintenance manual. 1.3. Engine is tagged and prepared for transport or storage in accordance with the specified procedures. 1.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Remove engine system components	2.1. Aircraft and/or engine system is prepared and rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel. 2.2. Removal is carried out in accordance with the

ELEMENT	PERFORMANCE CRITERIA
	applicable maintenance manual. 2.3. Engine system component is tagged and prepared for transport or storage in accordance with the specified procedures. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
3. Install engine	3.1. Engine to be installed is checked to confirm correct part or model numbers, modification status and serviceability. 3.2. Installation is carried out in accordance with the applicable maintenance manual. 3.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage. 3.4 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Install engine system components	4.1. Engine components to be installed are checked to confirm correct part or model numbers, modification status and serviceability. 4.2. Installation is carried out in accordance with the applicable maintenance manual. 4.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage. 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including lifting and handling heavy components

REQUIRED SKILLS AND KNOWLEDGE

- The use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - correctly remove and install engines, engine change units and APUs
 - prepare removed engines for transportation and/or storage
 - locate and correctly remove and install the range of engine system components listed in the Range Statement
- Identifying the requirement for adjustment and rigging of systems and controls after the installation of engines or system components

Required knowledge

Look for evidence that confirms knowledge of:

- Removal and installation procedures for aircraft:
 - engines
 - engine change units
 - APUs
- Engine inhibiting and de-inhibiting procedures
- Layout, installation and connection of components of:
 - fuel systems
 - lubrication systems
 - air systems
 - super and turbo charging systems
 - exhaust systems
 - ignition and igniter systems
 - starting systems
 - fire protection systems
- Accessories and associated drives
- Engine control system component removal and installation including the requirement for rigging and for the independent inspection of work performed
- Engine maintenance documentation and manuals
- Relevant OHS practices including those relating to the lifting and handling of heavy items
- How to obtain MSDS
- Use of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that safety precautions applicable to engines and engine systems being maintained are fully observed, understood and complied with, including allowance for the effect on aircraft centre of gravity when engines are removed. Awareness must be demonstrated of dual inspection requirements associated with work on engine control systems.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through removal and installation of a representative range of engines and engine system components. An understanding of component attachment methods and the need for adjustment, rigging and system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 7 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, or by the use of simulated activities, using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools,

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	test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Engines and engine system components:	<i>Engines and engine system components may include:</i> 1. Engine change unit or auxiliary power unit (turbo-prop, turbofan, turboshaft, turbojet, piston) 2. Fuel, oil and air system (or induction and super/turbo charger systems in the case of piston engine) components 3. Engine control system components 4. Ignition or igniter system components 5. Starting system components 6. Fire protection system components. 7. Accessories and associated drives.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities

RANGE STATEMENT**Procedures and requirements**

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA307C Remove and install propeller systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required for the removal and installation of fixed wing aircraft propellers and propeller system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install propellers and propeller system components Applications include propeller-driven fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove propellers and components.	1.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. Isolation and warning signs are installed/fitted to ensure personnel safety and freedom from damage

ELEMENT	PERFORMANCE CRITERIA
	during component removal. 1.2. Propeller system component removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 1.3. Required aircraft maintenance documentation is accurately completed and correctly processed. 1.4. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/ maintenance regulations/orders and standards and practices.
2. Install propellers and components.	2.1. Propeller system components to be installed are checked to confirm correct part numbers, serviceability and modification status. 2.2. Component installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 2.3. Support/safety equipment is removed at an appropriate time to ensure personnel safety and freedom from structural damage. 2.4. Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including lifting and handling heavy components
- The use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - Correctly remove and install propellers and related components such as spinners
 - Locate and correctly remove and install pitch control system components

REQUIRED SKILLS AND KNOWLEDGE

- Locate and correctly remove and install propeller de-icing system components
- Identifying requirements for adjustment and rigging of systems and controls.

Required knowledge

Look for evidence that confirms knowledge of:

- Propeller attachment methods and removal and installation procedures
- Propeller system component attachment methods for:
 - spinners
 - governors
 - beta control systems
 - de-ice and anti-ice systems
- Controls and control linkages including the requirement for rigging and for independent inspection of work performed
- Electrical circuit isolation, plug removal and installation
- Relevant OHS practices including those relating to lifting and handling of heavy items
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install propellers and propeller system components on propeller-driven fixed wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that shoring, trestling and lifting requirements and safety precautions applicable to propeller system maintenance are fully observed, understood and complied with, and that an awareness is

EVIDENCE GUIDE

	demonstrated of dual inspection requirements. Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a representative range of propeller system components. An understanding of component attachment methods, the need for adjustment or rigging and system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4 in the Range Statement (Group 5 may be omitted where it is not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Propeller system components	<i>Propeller system components may include:</i> 1. Propellers, including spinners where fitted 2. Constant speed, feathering and reversing propeller drives 3. Beta control systems and governors 4. Controls and linkages 5. De-ice/anti-ice equipment.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA308C Remove and install rotary wing rotor and flight control system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required for the removal and installation of rotary wing aircraft rotors and flight control system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install rotors and associated flight control system components. Applications include rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove rotary wing rotor	1.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. Isolation and warning signs are installed/fitted to ensure personnel safety. 1.2. <i>Rotary wing rotor</i> removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 1.3. Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices.
2. Remove rotary wing flight control system components.	2.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. Isolation and warning signs are installed/fitted to ensure personnel safety. 2.2. Rotary wing <i>flight control system component</i> removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders

ELEMENT	PERFORMANCE CRITERIA
	and standards and practices. 2.3. Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures. 2.4. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
3. Install rotary wing rotor	3.1. Rotor to be installed is checked to confirm correct part or model numbers, modification status and serviceability. 3.2. Mass balance of rotor blades/head is checked in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 3.3. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 3.4. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage.
4. Install rotary wing flight control system components.	4.1. Rotary wing flight control system components to be installed are checked to confirm correct part or model numbers, modification status and serviceability. 4.2. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices. 4.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage. 4.4. Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including lifting and handling heavy components
- The use of relevant maintenance documentation and aircraft manuals to:
 - correctly remove and install main rotors and rotor heads
 - check the mass balance of rotor blades and heads
 - correctly remove and install tail rotor blades and pitch control assemblies
 - locate and correctly remove and install mechanical flight control system components
 - locate and correctly remove and install drive train components such as gearboxes and drive shafts and couplings
 - identify the requirements for component balancing
- Identifying the requirements for adjustment and rigging of systems after component removal and installation

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods
- Removal and installation procedures for:
 - main rotors and rotor blades
 - rotor heads
 - tail rotors and tail rotor blades
 - swash plates
 - tail rotor pitch control assemblies
- Requirements for the checking and adjustment of blade tracking after rotor maintenance
- Control system layout, linkages and operation (operation only to the extent necessary for the specified tasks) including the requirement for rigging and the independent inspection of work performed
- Power train layout and assembly:
 - main rotor gearboxes
 - intermediate gearboxes
 - tail rotor gearboxes
 - drive shafts
 - couplings
- Relevant OHS practices including those relating to lifting and handling of heavy items
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install rotary wing aircraft rotors and flight control system components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that safety precautions applicable to the rotary wing rotor and flight control system components being maintained, including allowance for the effect on weight and balance (ie cg) when heavy components are removed, are fully observed, understood and complied with. Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through removal and installation of a representative range of the rotary wing rotor and flight control system components. An understanding of component attachment methods, the need for adjustment or rigging and system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for	Competency should be assessed in the work environment or simulated work environment using tools and

EVIDENCE GUIDE	
assessment	equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Rotary wing rotors and flight control system components	<i>Rotary wing rotors and flight control system components may include:</i> 1. Main rotor blades, tail rotor blades 2. Rotor heads 3. Swash plates, tail rotor pitch control assemblies 4. Mechanical flight control components (i.e. cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, control sticks or columns, tail rotor pedals) and mechanical components of powered flight control systems 5. Main rotor, intermediate or tail rotor gearboxes 6. Drive shafts, couplings.

RANGE STATEMENT	
Powered flight controls	In the case of hydraulically powered rotor control system components and related plumbing, maintenance work should be assessed against MEA302B Remove and install aircraft hydro-mechanical and landing gear system components
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA309C Inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot aircraft hydro-mechanical and landing gear systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the inspection, testing and troubleshooting of aircraft hydro-mechanical and landing gear systems and components. Applications include hydro-mechanical and landing gear systems and components fitted to both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical system and landing

Prerequisite units		
		gear components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect hydro-mechanical systems and components.	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures. 1.2. <i>Hydro-mechanical system and system components</i> are visually or physically checked for external signs of defects in accordance with specified procedures.
2. Inspect landing gear systems and components.	2.1. Isolation tags already attached to the system or related systems are checked and aircraft configured, including jacking where necessary, for safe system inspection and operation in accordance with specified procedures. 2.2. <i>Landing gear system and system components</i> are visually or physically checked for external signs of defects in accordance with specified procedures.
3. Test	3.1. The aircraft and hydro-mechanical systems are

ELEMENT	PERFORMANCE CRITERIA
hydro-mechanical and landing gear systems.	correctly prepared, in accordance with specified procedures, for the application of power. 3.2. Power is applied and system functionally tested, in accordance with specified procedures, for evidence of malfunction or leaks. 3.3. System calibration or adjustments are performed in accordance with specified procedures.
4. Prepare for troubleshooting.	4.1. Relevant maintenance documentation and modification status, including system defect/ service difficulty reports where relevant, are interpreted to identify an unserviceability.
5. Troubleshoot hydro-mechanical and landing gear systems.	5.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 5.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate <i>troubleshooting</i>. 5.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 5.4. Hydro-mechanical and landing gear system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 5.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Use of hand skills and tools in the inspection, adjustment and troubleshooting of hydraulic, fuel and landing gear systems
- Use of hand skills and tools in the inspection, adjustment and troubleshooting of hydraulic and fuel system components
- Jacking of the aircraft as required for landing gear system inspection, testing and

REQUIRED SKILLS AND KNOWLEDGE

troubleshooting

- Use of hand skills and tools in the inspection, adjustment and troubleshooting of landing gear components
- The use of maintenance manuals to prepare the aircraft for inspection, testing and troubleshooting of hydro-mechanical and landing gear systems and components
- The effective use of maintenance documentation and relevant fault diagnosis guides in the troubleshooting process
- The recognition of external defects in hydro-mechanical and landing gear systems and components
- Application of standard procedures
- Observance of all relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)

Required knowledge

Look for evidence that confirms knowledge of:

- Standard trade practices relating to tool usage and installation/securing of aircraft hardware
- Fluid power theory
- Hydraulic system layout, operation and characteristics (including electrical system interfaces) and system component construction and operation for:
 - flight control systems including primary controls, flaps, speed brakes and spoilers
 - landing gear retraction systems
 - brake and anti-skid systems
 - nosewheel steering systems
- Fuel system and component layout, operation and characteristics (including electrical system interfaces) and system component operation and construction
- Construction and operation of landing gear components including:
 - wheel assemblies
 - skids
 - floats
 - struts/oleos
 - uplocks and downlocks
 - mechanical linkages
- How to configure the aircraft for inspection, testing and troubleshooting of hydraulic, fuel and landing gear systems and components
- Maintenance requirements and troubleshooting procedures
- Relevant OHS practices relating to hydraulic systems, fuel systems and landing gear components including lifting and handling of heavy items
- How to obtain MSDS

REQUIRED SKILLS AND KNOWLEDGE

- Selection and use of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot a range of hydraulic and fuel system and landing gear components that are representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard procedures. Coverage of brakes and struts/oleos are not required where the aircraft is rotary wing and is fitted with skids or floats.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft hydro-mechanical and landing gear systems and their components.

It is essential that system test procedures take into account all safety precautions applicable to the system being maintained, especially where system operation/switching inter-relates to other systems being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system

EVIDENCE GUIDE	
	fault finding guide before undertaking any action. The work plan should take account of applicable safety (including safe handling of heavy components) and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on: • each type of system (Groups 1, 2, 6, 7, 8) • on at least one component of each group listed in the Range Statement against hydro-mechanical system components 3 to 5 • landing gear system components 9 to 11 Where the aircraft is rotary wing and is fitted with skids or floats coverage of Groups 6, 7, 8, 10 and 11 is not required and where a rotary wing aircraft is fitted with a fixed undercarriage with wheels coverage of Groups 6 and 7 is not required. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hydro-mechanical systems and system components	<i>Hydro-mechanical systems include:</i> 1. Hydraulic systems 2. Fuel systems <i>Components of hydro-mechanical systems include:</i> 3. Hydraulic accumulators, filters, reservoirs, valves, pumps, motors, actuators, regulators, direct reading gauges 4. Fuel system filters, valves, pumps, rigid and flexible storage cells/tanks 5. Rigid and flexible pipelines, hoses and fittings
Landing gear systems and system components	<i>Landing gear systems include:</i> (Components of landing gear systems are included in hydro-mechanical system components) 6. Retraction systems 7. Steering systems 8. Brake systems, including anti-skid where applicable <i>Landing gear components include:</i> 9. Wheel assemblies, skids and floats 10. Brake units 11. Struts/oleos
Troubleshooting	Involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit of competency may relate

RANGE STATEMENT	
	to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Electrical interface	The work can include associated electrical loom terminations and/or plugs.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA310C Inspect, test and troubleshoot aircraft pneumatic systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot aircraft pneumatic systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer licence extension under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the inspection, testing and troubleshooting of aircraft pneumatic systems and components. Applications include pneumatic systems and components fitted to both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA303C	Remove and install aircraft pneumatic system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect pneumatic systems and components.	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures. 1.2. <i>Pneumatic system</i> is visually or physically checked for external signs of defects in accordance with specified procedures.
2. Test pneumatic systems	2.1. The aircraft and pneumatic systems are correctly prepared, in accordance with specified procedures, for the application of power. 2.2. Power is applied and system functionally tested, in accordance with specified procedures, for evidence of malfunction or leaks. 2.3. System calibration or adjustments are performed in

ELEMENT	PERFORMANCE CRITERIA
	accordance with specified procedures.
3. Prepare for troubleshooting	3.1. Relevant maintenance documentation and modification status, including system defect/ service difficulty reports where relevant, are interpreted to identify an unserviceability.
4. Troubleshoot pneumatic systems.	4.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Pneumatic system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Use of hand skills and tools in the inspection, adjustment and troubleshooting of pneumatic systems
- Use of hand skills and tools in the inspection, adjustment and troubleshooting of pneumatic system components
- The use of maintenance manuals to prepare the aircraft for inspection, testing and troubleshooting of pneumatic systems and components
- The effective use of maintenance documentation and relevant fault diagnosis guides in the troubleshooting process
- The recognition of external defects in pneumatic systems and components
- Application of standard procedures
- Observance of all relevant occupational health and safety (OHS) practices

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of:

- Standard trade practices relating to tool usage and installation/securing of aircraft hardware
- Pneumatic system:
 - layout
 - operation and characteristics
 - component operation and construction
 - electrical and instrument system interfaces
- How to configure the aircraft for inspection, testing and troubleshooting of pneumatic systems and components
- Pneumatic system maintenance requirements and troubleshooting procedures
- OHS procedures relating to pneumatic systems and components
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures, including those relating to the handling and control of halon fire extinguishers

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to inspect, test and troubleshoot a range of pneumatic systems and components while applying all relevant OHS procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft pneumatic systems and their components. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained, especially where system operation/switching inter-relates to other systems being maintained. Ability to

EVIDENCE GUIDE

	interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on each type of system (Groups 1 to 4) and on at least one component from each of Groups 5 to 9, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Pneumatic systems and components	<i>Pneumatic systems include:</i> 1. De-icing 2. Air cycle air conditioning 3. Pressurisation 4. Fire extinguishing <i>Components of pneumatic systems include:</i> 5. Filters, valves, pumps, motors, actuators, regulators 6. Gauges (direct reading), temperature sensors, pressurisation controllers, temperature controllers 7. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers 8. Rigid and flexible pipelines, hoses and fittings 9. Ducting
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Electrical interface	The work can include associated electrical loom terminations and/or plugs.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA311C Inspect and repair/modify aircraft structures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, repair and modify aircraft structure and structural components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, applicable tools, maintenance publications and repair drawings to inspect and repair/modify aircraft structure, including the replacement of primary structure components. Applications include both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA304C	Remove and install non-pressurised aircraft structural and non-structural components
	OR	

Prerequisite units		
	MEA317C	Remove and install pressurised aircraft structural and non-structural components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft structure.	1.1. Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify <i>specific inspection requirements</i>. 1.2. Appropriate preparation and access to the aircraft structure is undertaken to allow for proper inspection in accordance with maintenance documentation. 1.3. Aircraft structure is visually or physically checked for signs of deformation defects or damage in accordance with maintenance documentation and approved procedures. 1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required.

ELEMENT	PERFORMANCE CRITERIA
2. Prepare to undertake repair.	2.1. Extent of damage is correctly assessed to assist in determining repair procedure. 2.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage. Jigs, fixtures or bracing is used as required to maintain shape and/or alignment. 2.3. Appropriate modification or repair scheme is identified in accordance with structural repair manual and/or approved data. 2.4. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or where damage is beyond specified limits. 2.5. All materials and equipment required are organised
3. Repair/modify aircraft structure	3.1. Required maintenance/repair documentation is accurately completed and correctly processed. 3.2. Structural repairs/modifications are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out. 3.3. Work area is cleaned of all waste material or contaminants. 3.4. Required mensuration/alignment checks are completed and components are adjusted, where necessary, to operate within prescribed specifications. 3.5. Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required. 3.6. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- Application of applicable occupational health and safety (OHS) regulations and practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of approved maintenance documentation and aircraft publications relating to aircraft structure
- Demonstrating appropriate cleaning procedures to enable structure inspection.
- Demonstrating correct inspection procedures, in particular pressurised aircraft, in accordance with aircraft and procedures manuals.
- Identifying damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of:
 - impact
 - fatigue
 - corrosion
- Identifying the various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft.
- Identifying composite materials used in aircraft construction, associated safety precautions and hazards.
- Inspecting damage and assessing composite components/structures.
- Handling and storing aircraft metals and composite materials including sealing agents, to industry standards.
- Identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour.
- Correctly interpreting and /or producing repair scheme/modification drawings (including third angle projection, isometric, sectional formats and hand sketches).
- Using appropriate hand tools and machines to remove and assemble aircraft structural components, parts, sections and skin including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins).
- Applying correct removal, installation and repair techniques for:
 - a range of rivets (blind and solid) using hand, squeeze and pneumatic situations
 - a range of close tolerance fasteners (standard and oversize - hilocks, taper locks), including hole preparation
 - threaded devices including internal and external thread cutting, Helicoil inserts and damaged stud replacement
 - hardware assembled by close tolerance fits using heat, cooling and force methods, including bearings, bushes and inserts
- Correctly supporting the aircraft structure by jacking, trestling and/or jiggling methods
- Performing a range of metal structure and composite material repair techniques including:
 - metal scab patch, flush, splice, lap and formed section repair

REQUIRED SKILLS AND KNOWLEDGE

- composite external patch, scarf and stepped repairs
- metal to metal and metal to composite bonding
- Applying structural corrosion removal/treatment techniques
- Restoring aircraft structure sealing and surface finishes

Required knowledge

Look for evidence that confirms knowledge of:

- Aircraft construction principles and structural component attachment methods:
 - types of aircraft structure
 - structural loads
 - loads under various conditions of flight
 - causes of structural failure
 - attachment methods:
 - bolts and screws
 - solid and blind rivets
 - close tolerance fasteners
 - bonding
- The construction methods used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels in pressurised and non-pressurised aircraft
- Describing various aircraft metals and their basic properties:
 - ferrous
 - non-ferrous
- Aircraft plastic transparency construction methods and common defects
- Glass windscreen basic constructional features and common defects
- Composite materials:
 - terminology
 - materials used for minor repairs
 - OHS requirements
- Aircraft structure inspection requirements:
 - metallic structure
 - non-metallic/composite structure (other than wood and fabric)
- Non-destructive inspection methods and application of the various techniques
- Assessment of structural damage:
 - types and classes of mechanical damage

REQUIRED SKILLS AND KNOWLEDGE

- types of corrosion and determining the extent of damage
- relevant documentation and manuals
- damage limits and repair schemes for metallic and non-metallic structure
- Procedures for the fabrication and fitment of metal repairs:
 - scab patch
 - flush patch
 - splice
 - lap
 - formed section
- Corrosion removal and passivation
- Procedures for performing composite repairs:
 - external patch
 - scarf patch
 - stepped repairs
- Procedures for replacement of primary structure components such as:
 - fuselage frames and longerons
 - wing spars or spar caps
 - wing-to-fuselage attachment fittings
 - tailplane attachment fittings
- Aircraft mensuration checks - when required and methodology
- Repair of integral fuel tanks and sealing of faying surfaces including specific OHS and PPE requirements
- Surface finishes and methods of restoration
- How to obtain MSDS
- Relevant maintenance and structural repair manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use maintenance manuals, repair scheme drawings and applicable tools to inspect and repair/modify aircraft structure while observing all

EVIDENCE GUIDE	
	relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and repair applications associated with aircraft maintenance. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure. Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft structure is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. Ability to interpret inspection and repair procedures and specifications and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads and aerodynamic requirements. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one inspection task from each of Groups 1 to 6 and at least one repair task from each of Groups 7 to 15, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Specific inspection requirements and repair tasks

Specific inspection requirements may cover:

1. Non-ferrous and ferrous alloys and composite (FRP) materials used in aircraft construction
2. Structural fastening and attachment hardware and/or devices
3. Seals, sealants
4. Glass, moulded plastics
5. Application of NDI techniques
6. Doors, hinges and locking mechanisms for damage/misalignment

Repair tasks may include:

7. Removing corrosion by chemical and mechanical methods
8. Restoring protective coatings
9. Applying sealants and jointing compounds
10. Freehand precision hole generation
11. Removing and installing structural hardware and fastening devices
12. Removing and replacing bushes, bearings and bearing surfaces
13. Removing and repairing damaged sections and reinstalling
14. Repairing by replacement major load-carrying structural members, ie skins, longerons, spars, frames, bulkheads
15. Minor repairs to non-metallic materials.

RANGE STATEMENT	
Inspection techniques	Inspection techniques may include: • Visual inspection • Physical checks • Mensuration and alignment.
Assembly stress defects	Assembly stress defects can refer to: • Oil canning • Buckling • Contour misalignment.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities, and includes special inspections required after events such as heavy landings, overstress or flight through heavy turbulence • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA312C Inspect, test and troubleshoot aircraft fixed wing flight control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot fixed wing aircraft flight control systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications and knowledge of system theory to inspect, test and troubleshoot aircraft flight control system components. Applications include fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA305C	Remove and install aircraft fixed wing flight control system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect fixed wing flight control systems and components.	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with applicable maintenance manual. 1.2. Fixed wing <i>flight control systems and components</i> are visually or physically checked for signs of defects in accordance with applicable maintenance manual
2. Test fixed wing flight control systems.	2.1. Powered controls of the aircraft and system are prepared, in accordance with maintenance manual, for the application of electrical and hydraulic power. 2.2. Power is applied, if necessary, and system is functionally tested, in accordance with applicable maintenance manual, for malfunction or evidence of incorrect rigging.. 2.3. System rigging is performed in accordance with applicable maintenance manual
3. Prepare for troubleshooting	3.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are interpreted to identify an unserviceability.

ELEMENT	PERFORMANCE CRITERIA
4. Troubleshoot fixed wing flight control systems.	4.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate <i>troubleshooting</i>. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Fixed wing flight control system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Fault rectification requirements are determined to assist in planning the repair.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) procedures
- The use of relevant maintenance documentation and aircraft manuals to:
 - Recognise defects during visual inspection of fixed wing flight control systems and system components
 - Rig fixed wing flight control systems
 - Functionally test the operation of fixed wing flight control systems and recognise system/component malfunction or evidence of incorrect rigging
- To the extent permitted by applicable fault diagnosis guides, troubleshooting unserviceabilities in fixed wing flight control systems and clearly recording the causes of the unserviceabilities

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to flight control system maintenance
- Standard trade practices relating to tool and test/rigging equipment usage and

REQUIRED SKILLS AND KNOWLEDGE

- installation/securing of system components
- Flight control system layout and operation:
- Theory of flight:
 - Airflow
 - Conditions of flight
 - Lift and forces
 - Drag
 - Wings, tailplane and vertical stabiliser
 - Lift augmentation (flaps, slats, slots)
 - Aircraft control surfaces and their function (elevator, ailerons, rudder, elevons, trim tabs)
 - Spoilers and speed brakes
 - Flight control balancing and flutter
 - Stability and control and flight control rigging
- Mechanical system layout and operation:
 - Cockpit controls
 - Cables and cable tensioning
 - Pulleys and fairleads
 - Bellcranks
 - Levers
 - Control surface horns
 - Screwjacks
 - Push/pull rods
- Powered flight controls:
 - system layout and operation
 - component construction and operation
 - electrical and instrument interfaces:
 - flaps
 - trim
 - position indication
- Flight control system maintenance procedures and troubleshooting methods
- Flight control system interfaces with automatic pilot systems
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to inspect, test and troubleshoot fixed wing aircraft flight control systems and components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with the aircraft fixed wing flight systems. It is essential that testing procedures take into account all safety precautions associated with flight control system operation, in particular where system operation/switching inter-relates to other systems being maintained, and that an awareness be demonstrated of dual inspection requirements associated with work on flight controls and systems.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. In addition, knowledge of dual inspection requirements must be demonstrated. The application of ground testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action.

The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to

EVIDENCE GUIDE	
	5 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Flight control systems and system components	<i>Flight control systems and system components may include:</i> 1. Elevator, aileron and rudder primary flight control systems and associated trim systems 2. Speed brake, spoiler, flap and high lift systems 3. Ailerons, elevators, rudders, trim tabs, speed brakes, spoilers, flaps, slats

RANGE STATEMENT	
	4. Actuators - mechanical, hydraulic, pneumatic or electric 5. Mechanical flight control components (cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, chains, sprockets, control sticks, wheels or columns, trim wheels or handles, rudder pedals).
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

MEA313C Inspect, test and troubleshoot piston engine systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot the systems and components of piston engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of piston engine and system theory to inspect, test and troubleshoot piston engines and engine system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA306C	Remove and install engine systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect piston engine system and components	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual. 1.2. <i>Piston engine</i> and/or components are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual.
2. Test piston engine system.	2.1. Aircraft and <i>engine system</i> are correctly prepared in accordance with applicable maintenance manual and connected to appropriate test equipment. 2.2. Built-in system test functions and status displays are activated, where applicable, outputs recorded and interpreted. 2.3. Assistance is provided with engine and/or system operation during prescribed test procedures to establish serviceability and correct function in

ELEMENT	PERFORMANCE CRITERIA
	accordance with applicable maintenance manual.
3. Prepare for troubleshooting	3.1. Relevant maintenance documentation and modification status, including system defect reports where relevant are used to identify an unserviceability.
4. Troubleshoot piston engine system	4.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Piston engine system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Fault rectification requirements are determined to assist in planning the repair.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) procedures including the use of Material Safety Data Sheets and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals
- Through visual/physical inspection, recognising external and internal signs of defects in piston engines, components and system components
- Assisting with testing of piston engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
- Compiling engine condition monitoring records
- Rigging and adjusting engine controls and systems
- Using fault diagnosis guides and equivalent data to accurately and efficiently

REQUIRED SKILLS AND KNOWLEDGE

troubleshoot the causes of unserviceabilities in piston engines and engine systems, clearly record details and identify the required rectification actions.

Required knowledge

Look for evidence that confirms knowledge of:

- OHS procedures associated with piston engine maintenance, including lifting and handling of heavy objects
- How to obtain MSDS
- Use of PPE

Fault diagnosis techniques

- Piston engine and engine system layout and operation:
 - four stroke engine theory of operation and performance
 - cylinder configurations
 - construction - components and materials
 - carburettors and air induction systems
 - fuel injection systems
 - fuels and their characteristics
 - ignition systems
 - lubricating systems and lubricants
 - cooling systems
 - exhaust systems
 - superchargers and turbochargers
 - accessory drives and mounts
 - controls and rigging of controls
 - piston engine maintenance requirements and troubleshooting procedures including ground running of engines
- System component operation including electrical and instrument system interfaces:
 - magnetos and ignition harnesses
 - spark plugs
 - fuel pumps
 - fuel filters
 - oil pumps
 - oil filters
 - oil tanks
 - vacuum pumps and air pumps
 - generators
 - starter motors
 - oil pressure gauges (direct reading)

REQUIRED SKILLS AND KNOWLEDGE

- temperature gauges (direct reading)
- tachometers
- manifold pressure gauges
- system and component maintenance requirements and troubleshooting procedures
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect, test and troubleshoot piston engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisor or other trades) associated with engine systems. It is essential that system testing procedures take into account all safety precautions associated with piston engine system operation, and that awareness be demonstrated of dual inspection requirements associated with work on engine controls.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of engine systems or types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures and functional rigging checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with

EVIDENCE GUIDE	
	other systems will be necessary to supplement evidence of ability to carry out rigging checks and troubleshoot the system within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 5 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	Testing of engines fitted to helicopters (where auxiliary drive is not available) may be carried out through the applicant directing a pilot qualified on type.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Piston engines and engine systems	<i>Piston engines and engine systems may include:</i> 1. Engine (all types), main components, accessories/drives 2. Control system 3. Ignition, starter systems 4. Fuel, air systems, super/turbo chargers 5. Oil system
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA314C Inspect, test and troubleshoot gas turbine engine systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot the systems and components of gas turbine engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of gas turbine engine and system theory to inspect, test and troubleshoot gas turbine engines and engine system components. Applications include fixed and rotary wing aircraft

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA306C	Remove and install engine systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect gas turbine engine system and components	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual. 1.2. Gas turbine engine and/or component are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual.
2. Test gas turbine engine system	2.1. Aircraft and gas turbine engine system are correctly prepared in accordance with applicable maintenance manual and connected to appropriate test equipment. 2.2. Built-in system test functions and status displays are activated, where applicable, outputs recorded and interpreted. 2.3. Assistance is provided with <i>gas turbine engine and/or system</i> operation during prescribed test procedures to establish serviceability and correct

ELEMENT	PERFORMANCE CRITERIA
	function in accordance with applicable maintenance manual
3. Prepare for troubleshooting.	3.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify an unserviceability.
4. Troubleshoot gas turbine engine system	4.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Gas turbine engine system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Fault rectification requirements are determined to assist in planning the repair.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required Skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) procedures including lifting and handling of heavy components
- The use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - Through visual/physical inspection, recognise external and internal signs of defects in gas turbine engines, components and system components
 - Assist with testing of gas turbine engine and engine system operation, be able

REQUIRED SKILLS AND KNOWLEDGE

to operate systems, monitor indications, record parameters and recognise correct function

- Compile engine condition monitoring records
- Rig and adjust engine controls and systems
- Using fault diagnosis guides and equivalent data, accurately and efficiently to troubleshoot the causes of unserviceabilities in gas turbine engines and engine systems, clearly record details and identify the required rectification actions

Required knowledge

Look for evidence that confirms knowledge of:

- Fault diagnosis techniques
- Gas turbine engine layout and operation:
 - types of gas turbine
 - operating principles and power output
 - gas path
 - intakes
 - compressors
 - combustion chambers
 - turbines
 - exhaust
 - thrust reversers
 - accessory drives
 - bearings and seals
 - maintenance requirements and troubleshooting procedures
- System and component operation including electrical and instrument system interfaces:
 - fuel control and fuels
 - lubrication and lubricants
 - air distribution
 - starting
 - ignition
 - power augmentation
 - instrumentation:
 - performance indication
 - condition indication
 - warning
 - presentation and interpretation of electronic displays
 - fire warning and extinguishing

REQUIRED SKILLS AND KNOWLEDGE

- control system and rigging of engine controls
- Engine spin/run procedures including the operation of APUs
- Engine condition monitoring
- Relevant OHS practices including the requirements for the lifting and handling of heavy components
- How to obtain MSDS
- Selection and use of PPE
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect, test and troubleshoot gas turbine engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisor or other trades) associated with engine systems. It is essential that system test procedures take into account all safety precautions associated with gas turbine engine system operation, especially with regard to high energy ignition units, and that awareness be demonstrated of dual inspection requirements associated with work on engine control systems.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of engine systems or engine types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in

EVIDENCE GUIDE

	practice is critical. The application of testing procedures and functional rigging checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out rigging checks and troubleshoot the system within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement, or where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information
Method of assessment	Testing of engines fitted to helicopters (where auxiliary drive is not available) may be carried out through the applicant directing a pilot qualified on type.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Gas turbine engine and/or systems	<i>Gas turbine engine and/or systems may include:</i> 1. Engine change unit, main components, accessories/drives 2. Control system 3. Ignition, starter systems 4. Fuel system 5. Oil system 6. Air system
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA315C Inspect, test and troubleshoot propeller systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot propeller systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of propeller and propeller system theory to inspect, test and troubleshoot propellers and propeller system components. Applications include propeller driven fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA307C	Remove and install propeller systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect propeller systems and components.	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with applicable maintenance manual. 1.2. Propeller system is visually or physically checked for rigging and external signs of defects in accordance with applicable maintenance manual.
2. Test propeller systems	2.1. Aircraft and system are correctly prepared, in accordance with maintenance manual, for the operation of engine and propeller system. 2.2. <i>Propeller and system</i> are functionally tested, in accordance with applicable maintenance manual, for evidence of malfunction or defects. 2.3. System calibration or adjustments are performed in accordance with applicable maintenance manual
3. Prepare for troubleshooting	3.1. Relevant maintenance documentation and modification status, including system defect reports

ELEMENT	PERFORMANCE CRITERIA
	where relevant, are interpreted to identify an unserviceability.
4. Troubleshoot propeller systems.	4.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 4.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting. 4.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 4.4. Propeller system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 4.5. Fault rectification requirements are determined to assist in planning the repair.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the lifting and handling of heavy components
- The use of relevant maintenance documentation and aircraft manuals to:
 - through visual/physical inspection, recognise external signs of defects or rigging abnormalities in propellers and propeller system components
 - functionally test propellers and propeller systems and recognise any indication of malfunction or incorrect rigging or adjustment
 - rig and adjust propeller controls and systems
- Using fault diagnosis guides and equivalent data, to accurately and efficiently troubleshoot the causes of unserviceabilities in propellers and propeller systems, clearly record details and identify the required rectification actions.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- Fault diagnosis techniques
- Propeller system layout and operation:
 - propeller types
 - propeller terminology
 - forces acting on a propeller
 - propeller construction
 - propeller operation
 - pitch changing mechanisms
 - governors and beta control
 - controls and rigging of propeller controls
 - maintenance requirements and troubleshooting procedures
- Ancillary systems and system component operation including electrical and instrument system interfaces:
 - de-icing and anti-icing
 - multi-engine synchronising and synchrophasing
 - feathering and unfeathering including auto feathering
 - pitch reversal
 - negative torque sensing and protection
 - de-coupling
 - braking
 - thrust and torque measuring and indication
 - maintenance requirements and troubleshooting procedures
- Relevant OHS practices including the requirements for the lifting and handling of heavy components
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance

EVIDENCE GUIDE	
	publications and propeller and propeller system theory knowledge to inspect, test and troubleshoot propellers and their systems on propeller driven fixed wing aircraft while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with propeller systems. It is essential that system test procedures take into account all safety precautions associated with propeller system operation, and that awareness be demonstrated of dual inspection requirements associated with work on propeller control systems. Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. System operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to troubleshoot the system within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4 listed in the Range Statement (Group 5 may be omitted where it is not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also

EVIDENCE GUIDE	
	expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Propeller and propeller systems	<i>Propeller and systems may include:</i> 1. Propellers, including spinners where fitted 2. Constant speed, feathering and reversing propeller drives 3. Beta control systems and governors 4. Controls and linkages 5. De-ice/anti-ice equipment.
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities

RANGE STATEMENT**Procedures and requirements**

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA316C Inspect, test and troubleshoot rotary wing rotor and control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and troubleshoot the rotor and control systems and components of rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of rotors and rotor control system theory to inspect, test and troubleshoot rotors and rotor control systems. Applications include rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA308C	Remove and install rotary wing rotor and flight control system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect rotor and rotor control systems and components	1.1. Isolation and warning signs are fitted/installed to the system or related systems and the aircraft configured for safe system inspection and operation in accordance with relevant aircraft publications/maintenance regulations orders and standards and practices. 1.2. <i>Rotor and rotor control system</i> is visually or physically checked/inspected for external signs of defects in accordance with relevant aircraft publications maintenance regulations/orders and standards and practices. 1.3. Defects are identified and recorded in accordance with standard enterprise procedures.
2. Ground test rotor and rotor control systems	2.1. Aircraft and system prepared in accordance with relevant aircraft publications/maintenance regulations orders and standards and practices, for the operation of engine and rotor system. 2.2. Rotor and rotor control system are functionally tested, in accordance with relevant aircraft publications maintenance regulations/orders and standards and practices, for evidence of malfunction. 2.3. System calibration or adjustments are performed in

ELEMENT	PERFORMANCE CRITERIA
	accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices.
3. Prepare for troubleshooting	3.1. Relevant aircraft publications and modification status, including system defect reports, are interpreted to identify an unserviceability.
4. Troubleshoot rotor and rotor control systems	4.1. Available information from aircraft maintenance documentation, inspection and test results is used to assist in fault determination. 4.2. Relevant aircraft publication fault diagnosis guide and logical processes are used to ensure efficient and accurate <i>troubleshooting</i>. 4.3. Specialist advice is obtained to assist with the troubleshooting process. 4.4. Rotor and rotor control system faults are located and the causes of the faults are clearly identified and recorded in aircraft maintenance documentation in accordance with standard enterprise procedures. 4.5. Fault rectification requirements are determined.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) procedures
- The use of relevant maintenance documentation and aircraft manuals to:
 - recognise through visual/physical inspection external signs of defects in the rotor, rotor head, tail rotor and flight control mechanical system components
 - ground test the rotor and control system and recognise correct function
 - rig and adjust rotor controls and systems
- Using fault diagnosis guides and equivalent data, to accurately and efficiently troubleshoot the causes of unserviceabilities in rotor control systems, clearly record details and identify the required rectification actions.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- Fault diagnosis techniques
- Standard trade practices relating to tool and test/rigging equipment usage
- Theory of flight:
 - Airflow
 - Conditions of flight
 - Lift and forces
 - Drag
- Rotary flight principles:
 - Terminology relating to:
 - aerofoils
 - main rotor blades
 - rotor discs
 - rotors - main and tail
 - Aerodynamic characteristics:
 - aerofoil design
 - forces
 - rotor thrust and power requirements
 - vortex ring
 - autorotation
 - Helicopter stability
- Helicopter dynamic components:
 - main rotors:
 - blades
 - heads
 - linkages
 - tail rotors
 - swash plates
 - transmissions and drive shafts
 - clutches and freewheeling units
- System and component operation including electrical and instrument system interfaces:
 - cyclic pitch control
 - collective pitch control
 - tail rotor control
 - mechanical and powered control systems
 - engine control interface
 - torque reaction and anti-torque devices

REQUIRED SKILLS AND KNOWLEDGE

- engine indication
- vibration monitoring
- Helicopter maintenance procedures and troubleshooting
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures including requirements for engine and rotor system operation
- Relevant OHS practices

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and rotor and rotor control system theory knowledge to inspect, test and troubleshoot rotors and their control systems on rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with the rotor control systems. It is essential that testing procedures take into account all safety precautions associated with ground testing of rotor and rotor control systems, and that awareness be demonstrated of dual inspection requirements associated with work on control systems.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of ground testing procedures should also clearly indicate knowledge of system operation. System operation knowledge, the relationship of individual components and the links with other systems will be

EVIDENCE GUIDE	
	necessary to supplement evidence of ability to troubleshoot the system within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 5, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	Functional testing of rotors and rotor control systems with engine/s running may be carried out with the applicant directing a pilot qualified on type.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Rotor and rotor control system	<i>Rotor and rotor control system may include:</i> 1. Main rotor blades, tail rotor blades 2. Rotor heads, swash plates, tail rotor pitch control assemblies 3. Mechanical, powered flight control components 4. Main rotor, intermediate or tail rotor gearboxes 5. Drive shafts, couplings
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA317C Remove and install pressurised aircraft structural and non-structural components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway and may also be part of a Structures Maintenance Certificate IV training pathway. It covers the competencies required to remove and install a range of pressurised aircraft structural and non-structural components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance publications to remove and install structural and non-structural components from pressurised aircraft. Applications include fixed wing aircraft with pressurised cabins.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components

Prerequisite units		
	MEA303C	Remove and install aircraft pneumatic system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove components	1.1. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage to aircraft or component during component removal. 1.2. Component removal is carried out in accordance with the applicable maintenance manual. 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4. Removed components are tagged and prepared for transport in accordance with specified procedures.
2. Install components.	2.1. Structural components to be installed are checked to confirm correct part numbers, serviceability and modification status. 2.2. Component installation is carried out in accordance with the applicable maintenance manual.

ELEMENT	PERFORMANCE CRITERIA
	2.3. Support/safety equipment is removed at an appropriate time to ensure personnel safety and freedom from structural damage. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required Skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation and aircraft manuals to:
 - remove structural components
 - install structural components
 - remove doors, door seals, windows and transparent panels
 - install doors, door seals, windows and transparent panels
- Checking and adjusting all doors and access panels including locking mechanisms and ensuring effective sealing

Required knowledge

Look for evidence that confirms knowledge of:

- Structural component methods of construction and attachment
- Faying surface treatment and fuel tank and pressure hull sealing
- Aircraft doors and related seals
- Window and transparent panel construction, attachment methods and sealing
- Aircraft interior fittings (trim, linings, seats, floor panels, and so on) construction and attachment methods
- The location and attachment or stowage methods for emergency equipment:
 - passenger escape systems
 - inflatable slides

REQUIRED SKILLS AND KNOWLEDGE

- life jackets
- life rafts
- location transmitters, beacons
- crew and/or passenger seat restraints
- Relevant maintenance manuals
- Relevant regulatory requirements and standard procedures
- Relevant OHS practices
- How to obtain MSDS
- Use of PPE
- Relevant maintenance manuals

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use maintenance manuals and applicable tools to remove and install removable structural and non-structural components from pressurised aircraft while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that shoring, trestling and lifting requirements and safety precautions applicable to the structure being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a representative range of the areas listed in the Range Statement. An understanding of component handling, attachment methods, adjustment and sealing as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

EVIDENCE GUIDE	
	A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Removable components of structure	Removable components are those that are installed using bolts and/or screws. Where component removal and installation requires the removal and installation of rivets the applicable unit is either MEA311B or MEA404B. <i>Structural components may include:</i>

RANGE STATEMENT	
	1. Removable components of wings, pylons, empennage, landing gear support structure, fairings, nacelles, thrust reversers 2. Removable components or sections of pressurised aircraft fuselage 3. Pressurised fuselage entry, cargo, access doors and associated pressure seals 4. Pressurised fuselage windows, transparent panels and associated seals 5. Where applicable, trim panels, linings, seats, cabin equipment and consoles, floor panels, coverings 6. Applicable emergency and safety equipment, including passenger escape systems, inflatable, slides, life jackets, rafts, location transmitters, beacons, crew and/or passenger seat restraints.
Installation	Includes checking and adjustment of all doors and access panels, including locking mechanisms, for correct fit and sealing.
Sealant removal and application	The removal and application of faying (contact or overlapping) surface, pressure hull and fuel tank sealants is included, where applicable
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA318B Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways. It covers the competencies required to inspect aircraft hydro-mechanical, gaseous and landing gear systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the inspection of aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components. Applications include hydro-mechanical, mechanical, gaseous and landing gear systems and components fitted to fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical system and landing

Prerequisite units		
		gear components
	MEA303C	Remove and install aircraft pneumatic system components
	MEA305C	Remove and install aircraft fixed wing flight control system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect hydro-mechanical systems and components.	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures. 1.2. <i>Hydro-mechanical system and system components</i> are visually or physically checked for external signs of defects in accordance with specified procedures.
2. Inspect landing gear systems and components	2.1. Isolation tags already attached to the system or related systems are checked and aircraft configured, including jacking where necessary, for safe system inspection and operation in accordance with specified procedures.

ELEMENT	PERFORMANCE CRITERIA
	2.2. Landing gear system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.
3. Inspect gaseous systems and components.	3.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures. 3.2. Gaseous system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.
4. Inspect mechanical systems and components.	4.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures. 4.2. Mechanical system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of all relevant OH&S procedures
- The use of maintenance manuals and documentation to prepare the aircraft and identify requirements for inspection of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components
- Use of hand skills and tools in the inspection, adjustment and troubleshooting of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems
- Use of hand skills and tools in the inspection of hydraulic, fuel, flight control, gaseous and mechanical system components
- Jacking of the aircraft as required for landing gear system inspection
- Use of hand skills and tools in the inspection of landing gear components
- The recognition of external defects in hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- How to recognise external defects in hydraulic, fuel, gaseous, flight control, landing gear and mechanical system components
- How to configure the aircraft for inspection of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components
- Inspection and testing requirements for gears, springs and bearings

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect a range of hydraulic, fuel, gaseous and mechanical system and landing gear components in accordance with relevant maintenance manual instructions while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft hydro-mechanical, gaseous, mechanical and landing gear systems and their components. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained, especially where system operation/switching inter-relates to other systems being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be

EVIDENCE GUIDE	
	demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on each type of system and on at least one component of each group listed in the Range Statement, as follows: - Hydraulic systems - a system and at least one component from each of hydro-mechanical system components 3 and 5 - Fuel systems - a system and at least one component from each of hydro-mechanical system components 4 and 5 - Landing gear systems - each listed system 6 to 8 - Landing gear components - one each of 9 to 11 - Gaseous systems - each listed system 12 to 15 and at least one component from each of gaseous system components 16 to 19 - Mechanical systems - a system applicable to each of system types 20 and 21 and at least one component from each of mechanical system components 22 to 24 This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

RANGE STATEMENT	
wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hydro-mechanical systems and system components	<i>Hydro-mechanical systems include:</i> 1. Hydraulic systems 2. Fuel systems <i>Components of hydro-mechanical systems include:</i> 3. Hydraulic accumulators, filters, reservoirs, valves, pumps, motors, actuators, regulators, direct reading gauges 4. Fuel system filters, valves, pumps, rigid and flexible storage cells/tanks 5. Rigid and flexible pipelines, hoses and fittings
Landing gear systems and system components (components of landing gear retraction, steering and braking systems are covered by hydro-mechanical and mechanical system components)	<i>Landing gear systems include:</i> 6. Retraction systems 7. Steering systems 8. Brake systems, including anti-skid where applicable <i>Landing gear components include:</i> 9. Wheel assemblies 10. Brake units 11. Struts/oleos
Gaseous systems and system components	<i>Gaseous systems include:</i> 12. Pneumatic 13. Air cycle air conditioning 14. Pressurisation 15. Fire extinguishing <i>Gaseous system components include:</i> 16. Gauges (direct reading), temperature sensors,

RANGE STATEMENT	
	pressurisation controllers, temperature controllers 17. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers, valves, actuators 18. Rigid and flexible pipelines and fittings 19. Ducting
Mechanical systems and system components	<i>Mechanical systems include:</i> 20. Mechanical operating and locking systems 21. Mechanical flight control systems or the mechanical elements of power-assisted flight control systems <i>Mechanical system components include:</i> 22. Cables, pulleys, guides, fairleads, tension regulators, chains, sprockets 23. Control rods, torque tubes, bellcranks, screwjacks, clutches, springs, bearings, gears 24. Control sticks, wheels, columns, trim wheels or handles, rudder pedals
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation Maintenance

Co-requisite units

Co-requisite units		

MEA319B Inspect gas turbine engine systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways. It covers the competencies required to inspect the systems and components of gas turbine engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of gas turbine engine and system theory to inspect gas turbine engines and engine system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA306C	Remove and install engine system and components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect gas turbine engine systems and components	1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with applicable maintenance manual 1.2. <i>Gas turbine engine</i> and/or components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • Application of relevant OH&S procedures • The use of relevant maintenance documentation and aircraft manuals to: • recognise through visual/physical inspection external and internal signs of

REQUIRED SKILLS AND KNOWLEDGE

defects/damage to gas turbine engine, components and system components

- assist with testing of gas turbine engine and engine system operation

Required knowledge

Look for evidence that confirms knowledge of gas turbine engine and engine system layout and operation, including electrical and instrument system interfaces

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect gas turbine engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions, in particular those relating to high-energy ignition units.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with gas turbine engines, components and systems. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This may be demonstrated through application across a number of engine systems. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine

EVIDENCE GUIDE	
	supervision on each of the systems listed in Range Statement Groups 1 to 6 and at least one component of each system. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations and used to assist in the inspection process would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Gas turbine engine and components	<i>Gas turbine engine may include:</i> 1. Engine change unit, main components, accessories/drives 2. Control system 3. Ignition, starter systems 4. Fuel system 5. Oil system

RANGE STATEMENT	
	6. Air system
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA320B Test and troubleshoot aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit requires application of hand skills, standard trade practices and systems knowledge in the testing and troubleshooting of aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components. Applications include hydro-mechanical, mechanical, gaseous and landing gear systems and components fitted to fixed wing aircraft.

Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the testing and troubleshooting of aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components. Applications include hydro-mechanical, mechanical, gaseous and landing gear systems and components fitted to fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA318B	Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting.	Relevant maintenance documentation and modification status, including system defect/ service difficulty reports where relevant, are interpreted to identify an unserviceability.
2. Test hydro-mechanical, mechanical, gaseous and landing gear systems and components.	2.1. The aircraft and hydro-mechanical, mechanical, gaseous and landing gear systems are correctly prepared, in accordance with specified procedures, for the application of power. 2.2. Power is applied and system and components functionally tested, in accordance with specified procedures, for evidence of malfunction or leaks. 2.3. System calibration or adjustments are performed in accordance with specified procedures.
3. Troubleshoot hydro-mechanical, mechanical, gaseous and landing gear	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination.

ELEMENT	PERFORMANCE CRITERIA
systems and components.	3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate <i>troubleshooting</i>. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. <i>Hydro-mechanical, mechanical, gaseous and landing gear system and component</i> faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of all relevant OH&S procedures
- The use of maintenance manuals to prepare the aircraft for testing and troubleshooting of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components
- Use of hand skills, tools and systems knowledge in the testing, adjustment and troubleshooting of hydraulic, fuel, gaseous, mechanical and landing gear systems
- Use of hand skills, tools and component knowledge in the adjustment and troubleshooting of hydraulic, fuel, gaseous and mechanical system components
- Jacking of the aircraft as required for landing gear system testing, rigging and troubleshooting
- Use of hand skills, tools and system/component knowledge in the adjustment and troubleshooting of landing gear components
- The effective use of maintenance documentation and relevant fault diagnosis guides in the troubleshooting process
- The recognition of external defects in hydro-mechanical, gaseous, mechanical and landing gear systems and components

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- Hydraulic, fuel, gaseous, mechanical and landing gear system layout, operation and characteristics and system component operation and construction including electrical system interfaces
- How to configure the aircraft for testing and troubleshooting of hydraulic, fuel, gaseous, mechanical and landing gear systems and components

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to test and troubleshoot a range of hydraulic, fuel, gaseous and mechanical system and landing gear components in accordance with relevant maintenance manual instructions while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with aircraft hydro-mechanical, gaseous, mechanical and landing gear systems and their components. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained, especially where system operation/switching inter-relates to other systems being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality

EVIDENCE GUIDE

	requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on each type of system and on at least one component of each group listed in the Range Statement, as follows: - Hydraulic systems - a system and at least one component from each of hydro-mechanical system components 3 and 5 - Fuel systems - a system and at least one component from each of 4 and 5 - Landing gear systems - each listed system 6 to 8 - Landing gear components - one each of 9 to 11 - Gaseous systems - each listed system 12 to 15 and at least one component from each of gaseous system components 16 to 19 - Mechanical systems - a system applicable to each of 20 and 21 and at least one component from each of mechanical system components 22 to 24 This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hydro-mechanical systems and components	<i>Hydro-mechanical systems include:</i> 1. Hydraulic systems 2. Fuel systems <i>Components of hydro-mechanical systems include:</i> 3. Hydraulic accumulators, filters, reservoirs, valves, pumps, motors, actuators, regulators, direct reading gauges 4. Fuel system filters, valves, pumps, rigid and flexible storage cells/tanks 5. Rigid and flexible pipelines, hoses and fittings
Landing gear systems and components (components of landing gear retraction, steering and braking systems are covered by hydro-mechanical and mechanical system components)	<i>Landing gear systems include:</i> 6. Retraction systems 7. Steering systems 8. Brake systems, including anti-skid where applicable <i>Landing gear components include:</i> 9. Wheel assemblies 10. Brake units 11. Struts/oleos
Gaseous systems and components	<i>Gaseous systems include:</i> 12. Pneumatic 13. Air cycle air conditioning 14. Pressurisation

RANGE STATEMENT	
	15. Fire extinguishing <i>Gaseous system components include:</i> 16. Gauges (direct reading), temperature sensors, pressurisation controllers, temperature controllers 17. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers, valves, actuators 18. Rigid and flexible pipelines and fittings 19. Ducting
Mechanical systems and components	<i>Mechanical systems include:</i> 20. Mechanical operating and locking systems 21. Mechanical flight control systems or the mechanical elements of power-assisted flight control systems <i>Mechanical system components include:</i> 22. Cables, pulleys, guides, fairleads, tension regulators, chains, sprockets 23. Control rods, torque tubes, bellcranks, screwjacks, clutches, springs, bearings, gears 24. Control sticks, wheels, columns, trim wheels or handles, rudder pedals
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA321B Test and troubleshoot aircraft fixed wing flight control systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways and must be taken with MEA318B. It covers the competencies required to test and troubleshoot fixed wing aircraft flight control systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications and knowledge of system theory to test and troubleshoot aircraft flight control systems and components. Applications include fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA318B	Inspect aircraft hydro-mechanical and mechanical systems and components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1.Relevant maintenance documentation and modification status, including system defect reports where relevant, are interpreted to identify an unserviceability.
2. Test fixed wing flight control systems	2.1.Powered controls of the aircraft and system are prepared, in accordance with maintenance manual, for the application of electrical and hydraulic power. 2.2.Power is applied, if necessary, and system is functionally tested, in accordance with applicable maintenance manual, for malfunction or evidence of incorrect rigging. 2.3.System rigging is performed in accordance with applicable maintenance manual.
3. Troubleshoot fixed wing flight control systems	3.1.Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination. 3.2.Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate <i>troubleshooting</i> . 3.3.Specialist advice is obtained, where required, to

ELEMENT	PERFORMANCE CRITERIA
	assist with the troubleshooting process. 3.4. Fixed wing flight control system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S procedures
- The use of relevant maintenance documentation and aircraft manuals to:
 - recognise defects during visual inspection of fixed wing flight control systems and system components
 - rig fixed wing flight control systems
 - functionally test the operation of fixed wing flight control systems and recognise system/component malfunction or evidence of incorrect rigging
 - To the extent permitted by applicable fault diagnosis guides, troubleshoot unserviceabilities in fixed wing flight control systems and clearly record the causes of the unserviceabilities

Required knowledge

Look for evidence that confirms knowledge of:

- Fault diagnosis techniques
- Flight control system layout and operation
- System component operation including electrical and instrument system interfaces

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications and system theory knowledge to test and troubleshoot fixed wing aircraft flight control systems and components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with the aircraft fixed wing flight systems. It is essential that testing procedures take into account all safety precautions associated with flight control system operation, in particular where system operation/switching inter-relates with other systems being maintained, and that knowledge be demonstrated of dual inspection requirements associated with work on flight controls and systems.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft types. The application of ground testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 3 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work environment

EVIDENCE GUIDE	
assessment	or simulated work environment using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Fixed wing flight control system and components	<i>Fixed wing flight control system may include:</i> 1. Ailerons, elevators, rudders, trim tabs, speed brakes, spoilers, flaps and slats 2. Actuators - mechanical, hydraulic, pneumatic or electric 3. Mechanical flight control components including cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, chains, sprockets, control sticks (or wheels or columns), trim wheels or handles, rudder pedals
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.

RANGE STATEMENT	
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA322B Test and troubleshoot gas turbine engine systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways and must be taken with MEA319B. This unit covers the competencies required to test and troubleshoot the systems and components of gas turbine engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of gas turbine engine and system theory to test and troubleshoot gas turbine engines and engine system components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA319B	Inspect gas turbine engine systems and

Prerequisite units		
		components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for troubleshooting	1.1. Relevant maintenance documentation and modification status, including system defect reports where relevant, are interpreted to identify an unserviceability.
2. Test gas turbine engine system.	2.1. Aircraft and gas turbine engine system are correctly prepared in accordance with applicable maintenance manual and connected to appropriate test equipment. 2.2. Built-in system test functions and status displays are activated, where applicable, outputs recorded and interpreted. 2.3. Assistance is provided with gas turbine engine and/or system operation during prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual.
3. Troubleshoot gas	3.1. Available information from maintenance

ELEMENT	PERFORMANCE CRITERIA
turbine engine system	documentation and inspection and test results is used, where necessary, to assist in fault determination. 3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting. 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process. 3.4. Gas turbine engine system faults are located and causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required. 3.5. Fault rectification requirements are determined to assist in planning the repair or adjustment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S procedures
- The use of relevant maintenance documentation and aircraft manuals to:
 - recognise through visual/physical inspection external and internal signs of defects in gas turbine engines, components and system components
 - assist with testing of gas turbine engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
 - compile engine condition monitoring records
 - rig and adjust engine controls and systems
- Using fault diagnosis guides and equivalent data, to accurately and efficiently troubleshoot the causes of unserviceabilities in gas turbine engines and engine systems, clearly record details and identify the required rectification actions

Required knowledge

Look for evidence that confirms knowledge of:

- Fault diagnosis techniques

REQUIRED SKILLS AND KNOWLEDGE

- Gas turbine engine and engine system layout and operation
- System component operation including electrical and instrument system interfaces

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to test and troubleshoot gas turbine engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisor or other trades) associated with engine systems. It is essential that system test procedures take into account all safety precautions associated with gas turbine engine system operation, especially with regard to high-energy ignition units, and that awareness be demonstrated of dual inspection requirements associated with work on engine control systems.

Evidence of transferability of skills and knowledge related to testing and troubleshooting is essential. This may be demonstrated through application across a number of engine systems or engine types. The application of testing procedures and functional rigging checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out rigging checks and troubleshoot the system within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and

EVIDENCE GUIDE	
	regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate. The level of troubleshooting is limited in its application to the use of fault diagnosis guides or other similar information
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Gas turbine engine systems	<i>Gas turbine engine systems may include:</i> 1. Engine change unit, main components,

RANGE STATEMENT	
	accessories/drives 2. Control system 3. Ignition, starter systems. 4. Fuel system 5. Oil system 6. Air system
Troubleshooting	<i>Troubleshooting</i> involves the use of fault finding charts or similar, to line replacement level.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA323B Perform advanced troubleshooting in aircraft mechanical maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers competencies required to progress from an Aircraft Maintenance Engineer at Certificate IV to the granting of a chosen B1 Aircraft Maintenance Engineer Licence or Aircraft Maintenance Specialist Certificate under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Assessment Guidelines. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer (Avionics or Mechanical as applicable) at Certificate IV are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of system theory knowledge and advanced fault diagnostic skills to identify the cause of defects that are beyond the bounds of maintenance manual fault diagnosis guides. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Verify the defect.	1.1. Available information from flight crew such as flight phase, aircraft configuration etc., maintenance documentation both current and previous history, is used as necessary, to assist in fault determination. 1.2. Inspection of the <i>affected system</i> is carried out to check both physical integrity and correct operation. Information gained from Central Maintenance Systems is verified against physical integrity and correct operation where applicable. The effects on a system from interfaces/ integration with other systems are taken into account.
2. Isolate the defect	2.1. Logical processes including the application of basic principles and system knowledge and known facts are used to augment maintenance manual fault

ELEMENT	PERFORMANCE CRITERIA
	diagnosis guides to ensure efficient and accurate troubleshooting. 2.2. Specialist advice is obtained, where required and/or available, to assist with the troubleshooting process. 2.3. Faults are located and the causes of the defects are clearly identified and correctly recorded in maintenance documentation including any other system(s) disturbed, where required.
3. Determine defect rectification requirements.	3.1. Defect rectification requirements are determined and the necessary repair action initiated once verification and isolation of the defect are confirmed.
4. Verify defect rectification	4.1. Defect is rectified in accordance with (IAW) approved maintenance data. 4.2. All systems disturbed or accessed during troubleshooting are restored as applicable using maintenance manuals, repair schemes or approved maintenance data. 4.3. All checks required by approved maintenance data to ensure correct operation of all disturbed systems are performed

Required Skills and Knowledge

Required knowledge

For systems and components relevant to the scope of the licence/ratings sought knowledge is required of:

- Theory related to system operation and interfaces between systems and with electrical/electronic control media to a level that will facilitate the diagnosis of faults beyond the level of maintenance manual fault diagnosis guides using reported symptoms and functional test results
- Component construction and theory of operation to a level that will facilitate the diagnosis of faults beyond the level of maintenance manual fault diagnosis guides using reported symptoms and functional test results
- Advanced fault diagnostic techniques
- Condition monitoring and trend analysis techniques

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply system theory knowledge and advanced fault diagnostic skills to identify the causes of defects not covered fully by maintenance manual fault diagnosis guides while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications related to mechanical systems, and where applicable other system interfaces/integration. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and ensure that they are applied in practice is critical, as is the demonstrated ability to apply fundamental system theory in the logical diagnosis of complex faults.

Evidence of transferability of skills and knowledge related to performance and supervision of inspection, testing and troubleshooting is essential. This must be demonstrated through application across a number of aircraft mechanical systems, including system interfaces/integration. The troubleshooting approach should clearly demonstrate an in-depth knowledge of underpinning theory of a system, with this knowledge being used in a logical process to augment and extend the scope of the aircraft/ system fault finding guide. The fault rectification work plan should take account of applicable safety (including safe handling of heavy components) and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved and the ability to identify the causes of defects not covered fully by maintenance manual fault diagnosis guides has been demonstrated under supervision without intervention. This shall be

EVIDENCE GUIDE	
	established via simulated activities at the CASR Part 147 Maintenance Training Organisation and performance during observed workplace activities.
Context of and specific resources for assessment	Competency is assessed in the workplace or simulated workplace and shall involve successfully dealing with a number of maintenance and fault scenarios across a range of systems listed in the Range Statement and related system components
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Troubleshooting	The competency applies to the troubleshooting from first principles, of defects beyond available maintenance data in the systems of fixed or rotary wing aircraft types. Troubleshooting must be demonstrated across a range of typical systems and system components that includes but is not limited to airframes, their engines and all systems (and parts thereof) operated by inherently mechanical or hydro-mechanical principles or means. Coverage is not required of specific type systems that are included in type training and Practical Consolidation of Training (PCT) activities leading to a specific type licence rating.
Application	Application of this unit may relate to: Scheduled or unscheduled maintenance activities

RANGE STATEMENT	
	Individual activities or troubleshooting tasks that would be performed during supervision of other personnel
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
Applicable systems	<i>Affected systems may include:</i> - Hydro-mechanical systems - Pneumatic systems - Flight control systems - Engines and engine systems - Propeller and rotor systems

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA325B Weigh aircraft and perform aircraft weight and balance calculations as a result of modifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers competencies required to progress from an Aircraft Maintenance Engineer at Certificate IV to the granting of a chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer (Avionics or Mechanical as applicable) at Certificate IV are pre-requisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Syllabus subjects/topics listed in Section 3

Application of the Unit

Application of the unit	This unit requires application of knowledge regarding aircraft weighing and the use of relevant maintenance publications and modification data (where applicable) to weigh an aircraft and use the results to calculate centre of gravity and confirm that it is within limits. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Weigh aircraft	1.1. The requirement for aircraft weighing is determined. 1.2. Aircraft is weighed in accordance with the specified procedure 1.3. Aircraft weighing results are provided to the Authorised Airworthiness Representative (AAR).
2. Calculate the weight and balance impact of a modification.	2.1. The new empty weight of the aircraft is determined and it is ensured that the weight is within the predetermined limits set by the AAR. 2.2. The new empty weight <i>centre of gravity of the aircraft is calculated</i> and it is ensured that the centre of gravity is within the predetermined limits set by the AAR. 2.3. Maintenance records are updated with new figures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S procedures
- Configuring aircraft for weighing
- Weighing aircraft
- Using weighing results to calculate centre of gravity

Required knowledge

Look for evidence that confirms knowledge of:

- Types of weighing equipment used to weigh aircraft and associated safety precautions:
 - mechanical platform scales
 - electronic platform scales
 - electronic load pots
- Methods used to level aircraft for weighing
- The importance of correctly configuring aircraft for weighing
- Mathematical formulae used to calculate centre of gravity

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to determine the requirement to weigh an aircraft, weigh it using a specified method and use the results to calculate centre of gravity. Safety precautions applicable to the weighing method involved are to be fully observed.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of aircraft types. Ability to interpret the instructions for configuring and weighing aircraft is critical. Evidence of transferability of skills and knowledge related to weighing of aircraft and calculation of centre of gravity is essential. The aircraft weighing work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards, especially in relation to aircraft jacking and levelling. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under supervision without intervention. This shall be established via simulated activities at the CASR Part 147 Maintenance Training Organisation and performance during observed workplace activities.
Context of and specific resources for assessment	Competency may be assessed in the workplace or in the training environment.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Centre of Gravity calculation	<i>Centre of gravity of the aircraft is calculated:</i> Using the results obtained by weighing an aircraft

RANGE STATEMENT	
	Using the weight and moment arm data for a modification.
Application	Application of this unit may relate to: - Scheduled or unscheduled maintenance activities - Individual activities or supervision of other personnel
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA327B Fabricate and/or repair aircraft mechanical components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME and Structures Certificate IV training pathways. It covers the competencies required to fabricate and repair a range of aircraft mechanical components and parts. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of relevant maintenance manuals, drawings and specifications to fabricate and repair a range of aircraft mechanical components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Fabricate mechanical components or parts.	1.1. Specifications are interpreted to determine the dimensions and procedure for fabrication. 1.2. Appropriate materials, tools, equipment and assembly or fabrication jigs are selected and prepared

ELEMENT	PERFORMANCE CRITERIA
	for the particular specification requirements. 1.3. Components or parts are fabricated in accordance with required specifications. 1.4. Test equipment and rigs are used, where applicable, to confirm serviceability of finished components. 1.5. Fabricated components are tagged, sealed and packaged within specified procedures. 1.6. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
2. Repair mechanical components or parts	2.1. Repair or replacement requirements are determined, following disassembly and assessment of component parts for serviceability, in accordance with the relevant maintenance documentation. 2.2. Tagging and repair instructions are accurately specified for parts requiring specialist repair. 2.3. Components are modified, as approved, by relevant manufacturers' bulletins or procedures. 2.4. Mechanical component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents. 2.5. Mechanical components are adjusted, as required, to operate within prescribed specifications. 2.6. Repaired components are tagged, sealed and packaged in accordance with specified procedures. 2.7. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant OH&S procedures
- The use of relevant maintenance documentation, specifications and

REQUIRED SKILLS AND KNOWLEDGE

aircraft/component manuals to:

- recognise state of serviceability and repair requirements for the range of mechanical components listed in the Range Statement
- fabricate components
- identify requirements and complete repairs
- test and/or adjust components as required
- correctly tag, seal and package completed components

Required knowledge

Look for evidence that confirms knowledge of:

- Component operation
- Fabrication and repair procedures and processes

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use relevant maintenance manuals, drawings and specifications to fabricate and repair mechanical components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of fabrication and repair applications associated with aircraft components. It is essential that the relevant procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of knowledge about the general aspects of material specification and selection, measurement and fabrication should be related to specific aircraft component fabrication applications. Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts

EVIDENCE GUIDE	
	requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable components	<i>Components to be fabricate and/or repaired may include:</i>

RANGE STATEMENT	
	1. Hose assemblies 2. Pipes 3. Cables, pulleys, chains, sprockets, gear drives Control rods, bellcranks, links
Repair	Repair comprises standard techniques for pipes and replacement of eye-ends, tubes or bearings for control rods/pulleys/sprockets and bushes or bearings for bellcranks and links.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA328C Maintain and/or repair aircraft mechanical components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain and repair a range of aircraft mechanical components and parts. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of relevant maintenance publications to maintain and repair a range of aircraft mechanical components. Applications include fixed and rotary wing aircraft, and components in workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
	MEA303C	Remove and install aircraft pneumatic

Prerequisite units		
		system components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain and/or repair mechanical components or parts.	1.1. Maintenance and/or repair requirements are determined, following disassembly and assessment of component parts for serviceability, in accordance with the relevant maintenance documentation. 1.2. Tagging and repair instructions are accurately specified for parts requiring specialist repair. 1.3. Appropriate materials, tools, equipment and assembly or fabrication jigs are selected and prepared for the particular specification requirements. 1.4. <i>Components or parts</i> are maintained, repaired or modified, as approved by relevant manufacturers' bulletins or procedures, in accordance with required specifications. 1.5. Mechanical component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 1.6. Mechanical components are adjusted, as required, to operate within prescribed specifications. Test

ELEMENT	PERFORMANCE CRITERIA
	equipment and rigs are used, where applicable, to confirm serviceability. 1.7. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures. 1.8. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and repair requirements for the range of mechanical components listed in the Range Statement
 - identify requirements and complete repairs and/or modifications
 - test and/or adjust components as required
 - correctly tag, seal and package completed components

Required knowledge

Look for evidence that confirms knowledge of:

- Construction, repair procedures and processes for:
 - cables
 - pulleys
 - chains,
 - sprockets
 - gear drives
 - control rods
 - bellcranks

REQUIRED SKILLS AND KNOWLEDGE

- linkages
- non-structural removable components of fuselages, fairings, nacelles, empennage and wings
- engine thrust reversers
- from unpressurised aircraft:
 - entry, cargo and access doors
 - windows
 - transparent panels
- Construction and serviceability criteria for hoses and pipes including pressure test requirements
- Construction, materials, cleaning and repair requirements for:
 - trim panels
 - cabin linings
 - seats
 - cabin equipment and consoles
 - floor panels
 - coverings
 - emergency equipment and stowages
 - cargo, crew and/or passenger seat restraints
- Relevant OHS practices
- How to obtain MSDS
- Use of PPE
- Relevant maintenance manuals, standards and specifications
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use relevant maintenance publications to maintain and repair mechanical components while applying all relevant safety precautions

Critical aspects for assessment and

The underlying skills inherent in this unit should be

EVIDENCE GUIDE	
evidence required to demonstrate competency in this unit	transferable across a range of maintenance and repair applications associated with aircraft components. It is essential that the relevant procedures are interpreted and applied to ensure quality and safety standards are achieved. Evidence of transferability of skills and knowledge related to maintenance/repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of components or parts from each of Groups 1 to 6, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Components or parts to be maintained and/or repaired	<i>Components or parts to be maintained and/or repaired may include:</i> 1. Hoses 2. Pipes 3. Cables, pulleys, chains, sprockets, gear drives 4. Control rods, bellcranks, links 5. Non-structural removable components of fuselages, fairings, nacelles, empennage, wings, thrust reversers. for non-pressurised aircraft - entry, cargo, access doors and associated seals, windows and transparent panels 6. Trim panels, linings, seats, cabin equipment and consoles, floor panels, coverings, emergency equipment (including passenger escape systems, inflatable slides, life jackets, rafts, location transmitters, beacons, cargo, crew and/or passenger seat restraints.
Repair	Repair comprises standard techniques for pipes and replacement of eye-ends, tubes or bearings for control rods/pulleys/sprockets and bushes or bearings for bellcranks and links.
Maintain	Maintain involves cleaning, inspection for wear or damage and adjustment and lubrication where applicable.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA329B Dismantle, inspect, maintain and assemble aircraft basic hydraulic and pneumatic components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of a Mechanical Certificate II training pathway. It covers the competencies required to maintain and/or repair aircraft basic hydraulic and pneumatic components under the guidance of a qualified person. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation to maintain, repair and modify aircraft basic hydraulic and pneumatic components under the guidance of a qualified person. Applications include fixed and rotary wing aircraft components either attached to the aircraft or in a workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to dismantle, inspect, maintain and assemble basic hydraulic and pneumatic components or parts	1.1. Remove and/or disassemble components in accordance with enterprise procedures, relevant maintenance documentation and qualified person guidance. 1.2. Maintenance and/or repair requirements as defined by the qualified person, enterprise procedures and the

ELEMENT	PERFORMANCE CRITERIA
	relevant maintenance documentation are understood. 1.3. Tagging and repair instructions are accurately specified in accordance with enterprise procedures and qualified person directions for parts requiring specialist repair. 1.4. Appropriate materials, tools, equipment and assembly or fabrication jigs where applicable are selected and prepared for the particular maintenance and repair requirements in accordance with enterprise procedures and relevant maintenance documentation.
2. Dismantle, inspect, maintain and assemble basic hydraulic and pneumatic components or parts	2.1. Routine maintenance, repair or modification procedures are carried out, as approved by relevant manufacturers' bulletins or procedures, in accordance with required enterprise procedures and specifications. 2.2. Component parts are assembled within specified tolerances and in accordance with enterprise procedures and the appropriate maintenance documents. 2.3. Where applicable and as required by the qualified person, assist in the final adjustment and testing of components to confirm serviceability.
3. Complete maintenance and repair activities	3.1. Required documentation is completed and processed in accordance with standard enterprise procedures. 3.2. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and standard/routine repair requirements for the

REQUIRED SKILLS AND KNOWLEDGE

- range of hydraulic and pneumatic components listed in the Range Statement.
- identify requirements under the guidance of a qualified person and complete routine repairs and/or modifications.
- adjust components under expert guidance as required.
- where post-assembly testing is applicable, set up components for testing and have a basic understanding of the test procedures.
- correctly tag, seal and package completed components.

Required knowledge

Look for evidence that confirms knowledge of:

- component operation at a basic level
- standard/routine repair procedures and processes

For the purpose of this Unit of Competency, basic knowledge is defined as the level of knowledge required to:

- understand the instructions provided by qualified persons and relevant documentation for the disassembly, routine replacement of component parts and seals and reassembly of components
- under guidance and in the training environment make post-assembly adjustments such as length of stroke or operating pressure
- under guidance and in the training environment perform simple tests involving pressure and function

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain, repair and modify aircraft basic hydraulic and pneumatic components under qualified person guidance while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with aircraft components. It is essential that the relevant enterprise procedures are interpreted and applied to ensure quality and safety

EVIDENCE GUIDE	
	standards are achieved. Evidence of transferability of skills and knowledge related to maintenance/repair standard operating procedures is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability under qualified person guidance and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components or parts from each of Groups 1 to 4, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Components to be maintained and/or repaired/modified	<i>Components to be maintained and/or repaired/modified may include:</i> 1. hoses 2. pipes 3. simple check or shutoff valves 4. basic hydraulic and pneumatic actuators and valves.
Routine work	Routine work: is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure)
Work outcomes	All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.
Scope of work	Note that the scope of any repair or modification and the procedure to be followed will be provided by the qualified person, and be within the scope of the skills and knowledge included in the Unit of Competency MEA109B.
Maintain	<i>Maintain:</i> • involves cleaning, inspection for wear or damage and consequent replacement of parts, and routine adjustment and lubrication where applicable in accordance with enterprise procedures
Application	Work can relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures

RANGE STATEMENT	
	tasks performed either autonomously or as part of a team and under the guidance of a qualified person
Procedures and requirements	Refer to procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA330B Dismantle, inspect, maintain and assemble aircraft non-primary structural removable components or parts and internal fittings

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of a Mechanical Certificate II training pathway. It covers the competencies required to maintain and perform routine basic repairs, under qualified person guidance, on a range of aircraft non-primary structural removable components or parts. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation to dismantle, inspect, maintain, and assemble aircraft non-primary structural removable components and interior fittings/emergency equipment under the guidance of a qualified person. Applications include fixed and rotary wing aircraft components either attached to the aircraft or in a workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to dismantle, inspect, maintain and assemble	1.1. Remove and/or disassemble components in accordance with enterprise procedures, relevant maintenance documentation and qualified person

ELEMENT	PERFORMANCE CRITERIA
non-primary structural removable components or parts and internal fittings	guidance. 1.2. Maintenance and/or repair requirements as defined by the qualified person, enterprise procedures and the relevant maintenance documentation are understood. 1.3. Tagging and repair instructions are accurately specified in accordance with enterprise procedures and qualified person directions for parts requiring specialist repair. 1.4. Appropriate materials, tools, equipment and assembly or fabrication jigs where applicable are selected and prepared for the particular maintenance and repair requirements in accordance with enterprise procedures and relevant maintenance documentation.
2. Dismantle, inspect, maintain and assemble non-primary structural removable components or parts and internal fittings	2.1. <i>Routine maintenance, repair or modification processes</i> are carried out as approved by relevant manufacturers' bulletins or procedures, in accordance with required enterprise procedures and specifications. 2.2. Component parts are assembled within specified tolerances in accordance with enterprise procedures and the appropriate maintenance documents. 2.3. Where applicable and as required by the qualified person, assist in the conduct of final load or functional tests.
3. Complete maintenance/modification activities	3.1. Required documentation is completed and processed in accordance with standard enterprise procedures. 3.2. Where applicable, maintained/repaired or modified components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures

REQUIRED SKILLS AND KNOWLEDGE

- the use of relevant maintenance documentation, specifications and aircraft/component manuals to:
 - for on-aircraft work, correctly remove and install components covered by the Range Statement, including emergency equipment
 - recognise state of serviceability and standard/routine repair requirements for the range of components listed in the Range Statement
 - identify requirements under the guidance of a supervisor and complete repairs and/or modifications
 - adjust components under expert guidance as required
 - where load or functional testing is applicable, in the training environment, set up components for testing and perform tests
 - correctly tag, seal and package completed components

Required knowledge

Look for evidence that confirms knowledge of:

- component construction and/or operation at a basic level
- standard/routine repair procedures and processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to dismantle, maintain and assemble aircraft non-primary structural removable components or parts under qualified person guidance while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with the aircraft components listed in the Range Statement. It is essential that the relevant enterprise procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to maintenance/repair enterprise procedures is essential. This may be demonstrated through application

EVIDENCE GUIDE	
	across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components or parts from each of Groups 1 to 3, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools found in most routine situations would be used where appropriate, and that competency would be demonstrated in setting up components for functional or load testing where such routine tests are specified.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment

RANGE STATEMENT	
	requirements included in the Evidence Guide.
Routine maintenance, repair or modification processes	<i>Routine maintenance, repair or modification processes may be performed on:</i> 1. non-structural removable components of fuselages, fairings, nacelles, empennage, wings, thrust reversers. For non-pressurised aircraft - entry, cargo, access doors and associated seals, windows and transparent panels 2. trim panels, linings, seats, cabin equipment and consoles, floor panels, coverings, emergency equipment (including passenger escape systems and inflatable slides where appropriate, ie excluding removal and installation of slides fitted to wide-bodied aircraft), and cargo, crew and/or passenger seat restraints 3. stowages for life jackets, rafts, location transmitters and beacons (including the removal and installation of the equipment where applicable)
Routine work	Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure).
Work outcomes	Work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.
Primary structure	Note that 'primary structure/structural' refers to all components of an aircraft, the failure of which would seriously endanger safety, eg wing or tailplane spars, main fuselage frames, engine bearers, portions of skin that are highly stressed. 'Non-primary' refers to any other items.
The scope of any modification and the procedure to be followed	The scope of any modification and the procedure to be followed will be provided by the qualified person, and be within the scope of the skills and knowledge included in the Unit of Competency MEA109A.

RANGE STATEMENT	
Repair	Repair comprises standard techniques as defined by the qualified person and/or the relevant maintenance manual.
Maintain	Maintain involves removal and installation, cleaning, inspection for wear or damage and consequent replacement of parts, and routine adjustment and lubrication where applicable in accordance with enterprise procedures.
Application	Work can relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures • tasks performed either autonomously or as part of a team and under the guidance of a qualified person
Procedures and requirements	Refer to procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA331B Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of a Mechanical Certificate II training pathway. It covers the competencies required to undertake routine maintenance and/or repair/modify aircraft gas turbine engine components or parts under the guidance of a qualified person. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation to dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts under the guidance of a qualified person. Applications include gas turbine engine components or parts in a workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts.	1.1. Remove and/or disassemble components in accordance with enterprise procedures, relevant maintenance documentation and qualified person guidance. 1.2. Maintenance and/or repair requirements as defined by the qualified person, enterprise procedures and the

ELEMENT	PERFORMANCE CRITERIA
	relevant maintenance documentation are understood. 1.3. Tagging and repair instructions are accurately specified in accordance with enterprise procedures and qualified person directions for parts requiring specialist repair. 1.4. Appropriate materials, tools, equipment and assembly or fabrication jigs where applicable are selected and prepared for the particular maintenance and repair requirements in accordance with enterprise procedures and relevant maintenance documentation.
2. Dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts.	2.1. Routine maintenance, repair or modification procedures are carried out, as approved by relevant manufacturers' bulletins or procedures, in accordance with required enterprise procedures and specifications. 2.2. Component parts are assembled within specified tolerances and in accordance with enterprise procedures and the appropriate maintenance documents. 2.3. Where applicable and as required by the qualified person, assist in the final adjustment and testing of components to confirm serviceability.
3. Complete maintenance repair or modification activities.	3.1. Required documentation is completed and processed in accordance with standard enterprise procedures. 3.2. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and standard/routine maintenance and repair

REQUIRED SKILLS AND KNOWLEDGE	
requirements for the range of engine components listed in the Range Statement • identify requirements under the guidance of a qualified person and complete repairs and/or modifications • Correctly tag, seal and package completed components	
Required knowledge	
Look for evidence that confirms knowledge of: • component operation at a basic level • standard/routine repair procedures and processes	

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to dismantle, inspect, maintain and assemble aircraft gas turbine engine components or parts under qualified person guidance while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with engine components. It is essential that the relevant enterprise procedures are interpreted and applied to ensure quality and safety standards are achieved. Evidence of transferability of skills and knowledge related to enterprise procedures for maintenance and repair is essential. This may be demonstrated through application across a number of different engine components. Ability to assess component serviceability under qualified person guidance and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be

EVIDENCE GUIDE	
	demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components or parts listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools found in most routine situations would be used where appropriate
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Routine work	Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure).
Work outcomes	Work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.

RANGE STATEMENT	
Components	Maintain basic components such as oil coolers, fuel nozzles, flex drive shafts, fuel manifolds and engine bearings. Also, engine change unit hoses, pipes and ducts, and like components fitted to modular assemblies and sub-assemblies
Repair or modify	Repair or modify compressor and turbine blades
Scope of work	Note that the scope of any repair or modification and the procedure to be followed will be provided by the qualified person, and be within the scope of the skills and knowledge included in the Unit of Competency MEA109B.
Maintain	Maintain involves removal and installation, cleaning, inspection for wear or damage and consequent replacement of parts, and routine adjustment and lubrication where applicable in accordance with enterprise procedures.
Application	Work can relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures • tasks performed either autonomously or as part of a team and under the guidance of a qualified person
Procedures and requirements	Refer to procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA332B Dismantle, inspect, maintain and assemble aircraft mechanical components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of a Mechanical AQF2 training pathway. It covers the competencies required to maintain and/or perform basic routine repairs on a range of aircraft mechanical components or parts under the guidance of a qualified person. This unit does not cover work on hydraulic and pneumatic components or parts. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation to dismantle, inspect, maintain and assemble aircraft mechanical components or parts under the guidance of a qualified person. Applications include components or parts either attached to the aircraft or in a workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to dismantle, inspect, maintain and assemble basic mechanical components or parts.	1.1. Remove and/or disassemble components in accordance with enterprise procedures, relevant maintenance documentation and qualified person guidance. 1.2. Maintenance and/or repair requirements as defined by the qualified person, enterprise procedures and

ELEMENT	PERFORMANCE CRITERIA
	the relevant maintenance documentation are understood. 1.3. Tagging and repair instructions are accurately specified in accordance with enterprise procedures and qualified person directions for parts requiring specialist repair. 1.4. Appropriate materials, tools, equipment and assembly or fabrication jigs where applicable are selected and prepared for the particular maintenance and repair requirements in accordance with enterprise procedures and relevant maintenance documentation
2. Maintain and/or repair mechanical components or parts.	2.1. Routine maintenance, repair or modification procedures are carried out, as approved by relevant manufacturers' bulletins or procedures, in accordance with required enterprise procedures and specifications. 2.2. Mechanical component parts are assembled within specified tolerances in accordance with enterprise procedures and the appropriate maintenance documents. 2.3. Where applicable and as required by the qualified person, assist in the final adjustment of components to confirm serviceability.
3. Complete maintenance/repair activities.	3.1. Required documentation is completed and processed in accordance with standard enterprise procedures. 3.2. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures

REQUIRED SKILLS AND KNOWLEDGE

- the use of relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and standard/routine repair requirements for the range of mechanical components listed in the Range Statement
 - identify requirements under the guidance of a qualified person and complete routine repairs and/or modifications
 - adjust components under qualified person guidance as required
 - where post-assembly testing is applicable, under guidance and in the training environment, set up components for testing and perform tests
 - Correctly tag, seal and package completed components

Required knowledge

Look for evidence that confirms knowledge of:

- component operation at a basic level
- standard/routine repair procedures and processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to dismantle, inspect, maintain and assemble aircraft mechanical components or parts under qualified person guidance while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with aircraft components. It is essential that the relevant enterprise procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to enterprise procedures for maintenance and repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability

EVIDENCE GUIDE	
	under qualified person guidance and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components or parts listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Work is undertaken:	•
Routine work	Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a

RANGE STATEMENT	
	customary or regular course of procedure).
Outcomes	Outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.
Maintain and/or repair/modify basic components	Maintain and/or repair/modify basic components such as cables, pulleys, chains, sprockets, gear drives, control rods, bellcranks and links.
Scope of work	Note that the scope of any repair or modification and the procedure to be followed will be provided by the qualified person, and be within the scope of the skills and knowledge included in the Unit of Competency MEA109B
Repair	Repair comprises replacement of parts such as eye-ends, tubes, bearings, and bushes
Maintain	Maintain involves cleaning, inspection for wear or damage and routine adjustment and lubrication where applicable in accordance with enterprise procedures
Application	Work can relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with enterprise procedures and applicable maintenance documentation • tasks performed either autonomously or as part of a team and under the guidance of a qualified person
Procedures and requirements	Refer to procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA333B Dismantle, inspect, maintain and assemble aircraft piston engine components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of a Mechanical Certificate II training pathway. It covers the competencies required to undertake routine maintenance and/or repair/modification of aircraft piston engine components or parts under the guidance of a qualified person. Achievement of this unit will contribute towards the attainment of Unit MEA388A. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation to dismantle, inspect, maintain and assemble aircraft piston engine components or parts under the guidance of a qualified person. Applications include piston engine components or parts in a workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to dismantle inspect, maintain and assemble piston engine components or parts.	1.1. Maintenance and/or repair requirements as defined by the qualified person, standard enterprise procedures and the relevant maintenance documentation are understood. 1.2. Tagging and repair instructions are accurately specified in accordance with standard enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures and as directed by a qualified person for parts requiring specialist repair. 1.3. Appropriate materials, tools, equipment and assembly or fabrication jigs where applicable are selected and prepared for the particular maintenance and repair requirements in accordance with standard enterprise procedures and relevant maintenance documentation.
2. Dismantle, inspect, maintain and assemble aircraft piston engine components or parts.	2.1. Remove and/or disassemble components in accordance with standard enterprise procedures, relevant maintenance documentation and qualified person guidance. 2.2. Routine maintenance, repair or modification procedures are carried out, as approved by relevant manufacturers' bulletins or procedures, in accordance with required standard enterprise procedures and specifications. 2.3. Component parts are assembled within specified tolerances and in accordance with standard enterprise procedures and the appropriate maintenance documents. 2.4. Where applicable, and as required by the qualified person, assist in the final adjustment and testing of components to confirm serviceability.
3. Complete maintenance, repair or modification activities.	3.1. Required documentation is completed and processed in accordance with standard enterprise procedures. 3.2. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of relevant maintenance documentation, specifications and

REQUIRED SKILLS AND KNOWLEDGE

aircraft/component manuals to:

- recognise state of serviceability and standard/routine maintenance and repair requirements for the range of engine components listed in the Range Statement
- identify requirements under the guidance of a qualified person and complete repairs and/or modifications
- correctly tag, seal and package completed components

Required knowledge

Look for evidence that confirms knowledge of:

- component operation at a basic level
- standard/routine repair procedures and processes

For the purpose of this unit, basic knowledge is defined as the level of knowledge required to:

- remove, install and maintain components such as hoses, pipes and ducts etc
- dismantle and maintain engine assemblies and sub-assemblies
- apply Unit MEA109B skills to repair or modify components of sub-assemblies and systems listed in the Range Statement

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to dismantle, inspect, maintain and assemble aircraft piston engine components or parts under qualified person guidance while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with engine components. It is essential that the relevant standard enterprise procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to maintenance/repair standard enterprise

EVIDENCE GUIDE	
	procedures is essential. This may be demonstrated through application across a number of different engine components. Ability to assess component serviceability under qualified person guidance and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components or parts listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Routine work	Routine work is carried out using basic operational knowledge and a defined range of

RANGE STATEMENT	
	skills ('routine' work is that which follows a customary or regular course or procedure).
Outcomes are achieved by:	Outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with standard enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality
Scope of work	Note that the scope of any repair or modification and the procedure to be followed will be provided by the qualified person, and will be within the scope of the Unit of Competency MEA109A.
Maintain	Maintain involves removal and installation, cleaning, inspection for wear or damage and consequent replacement of parts, and routine adjustment and lubrication where applicable, in accordance with standard enterprise procedures
Components to be maintained	<i>Components to be maintained include hoses, pipes, ducts and components of:</i> • cooling systems • engine head assemblies • engine block assemblies • accessory drives • lubrication systems
Application	Work can relate to: • routine scheduled or unscheduled maintenance activities performed under qualified person guidance in accordance with standard enterprise procedures • tasks performed either autonomously or as part of a team and under the guidance of a qualified person
Procedures and requirements	Refer to procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA339B Inspect, repair and maintain aircraft structures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, repair and maintain aircraft structure. The competency elements and performance criteria also cover a significant portion of those required for Unit MEA311B Inspect and repair/modify aircraft structures. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines

Application of the Unit

Application of the unit	This unit requires application of procedures and techniques associated with the inspection and maintenance of aircraft structure, and with the performance of a limited range of metal and composite repairs. Applications include the performance of structural maintenance activities on fixed or rotary wing aircraft on the flight line or in the hangar.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA304C	Remove and install non-pressurised aircraft structural and non-structural components
	OR	
	MEA317C	Remove and install pressurised aircraft structural and non-structural components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft structure	1.1. <i>Relevant maintenance documentation</i> is used to identify specific inspection requirements. 1.2. Appropriate preparation and access to the aircraft structure is undertaken to allow for proper inspection in accordance with maintenance documentation. 1.3. <i>Aircraft structure</i> is visually or physically checked for signs of deformation defects or damage in accordance with maintenance documentation and approved procedures.

ELEMENT	PERFORMANCE CRITERIA
	1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required. 1.5. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Prepare to undertake repair	2.1. Extent of damage is correctly assessed to assist in determining repair procedure. 2.2. Appropriate repair scheme is identified in accordance with structural repair manual and/or approved data. 2.3. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage is out of limits. 2.4. All materials and equipment required are organised.
3. Repair and maintain aircraft structure	3.1. Structural repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out. 3.2. Preventative maintenance techniques are employed to preserve the integrity of aircraft structure. 3.3. Work area is cleaned of all waste material or contaminants. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Applying all relevant occupational health and safety (OHS) procedures including the use of Material Safety Data Sheets (MSDS) and selection and use of applicable items of personal protective equipment (PPE)

REQUIRED SKILLS AND KNOWLEDGE

- Demonstrating appropriate cleaning procedures to enable structure inspection.
- Demonstrating correct inspection procedures, in particular pressurised aircraft, in accordance with aircraft and procedures manuals.
- Identifying damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of impact, fatigue or the various types of corrosion.
- Inspecting damage and assessing composite components/structures.
- Identifying various aircraft metals and their basic properties.
- Identifying composite materials used in aircraft construction, associated safety precautions and hazards.
- Correctly interpreting repair scheme drawings (including third angle projection, isometric, sectional formats and hand sketches).
- Using appropriate hand tools and machines including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins).
- Applying correct removal, installation and repair techniques for:
 - a range of rivets (blind and solid) using hand, squeeze and pneumatic situations
 - a range of close tolerance fasteners (standard and oversize - hilocks, taper locks), including hole preparation
 - threaded devices including internal and external thread cutting, Helicoil inserts and damaged stud replacement
 - hardware assembled by close tolerance fits using heat, cooling and force methods, including bearings, bushes and inserts
- Performing a range of metal structure and composite material repair techniques including:
 - metal scab patch, flush, splice, lap and formed section repair
 - composite external patch, scarf and stepped repairs
 - metal to metal and metal to composite bonding
- Applying structural corrosion removal/treatment techniques.
- Restoring aircraft structure sealing and surface finishes.

Required knowledge

Look for evidence that confirms knowledge of:

- Applicable occupational health and safety (OHS) procedures, including the use of MSDS and PPE
- Construction methods and materials used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels in pressurised and non-pressurised aircraft
- Definition of structural terms, i.e. failsafe, stress, strain, shear, cycles

REQUIRED SKILLS AND KNOWLEDGE

- Potential causes of structural failure.
- Non-destructive inspection methods and application of the various techniques.
- Construction methods of, and assessing common defects in, aircraft plastic transparencies.
- Basic constructional features of, and assessing common defects in, glass windscreens.
- The various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft.
- The terms associated with composite materials.
- Requirements for handling and storing aircraft metals and composite materials including sealing agents, to industry standards.
- Means of identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour.
- Assessment of structural damage:
 - types and classes of mechanical damage
 - types of corrosion and determining the extent of damage
 - relevant documentation and manuals
 - damage limits and repair schemes for metallic and non-metallic structure
- Procedures for the fabrication and fitment of metal repairs:
 - scab patch
 - flush patch
 - splice
 - lap
 - formed section
- Corrosion removal and passivation
- Procedures for performing composite repairs:
 - external patch
 - scarf patch
 - stepped repairs
- Repair of integral fuel tanks and sealing of faying surfaces including specific OHS and PPE requirements
- Surface finishes and methods of restoration including specific OHS and PPE requirements
- How to obtain MSDS
- Relevant maintenance and structural repair manuals
- Relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect and maintain aircraft structure and perform a range of metal and composite structural repair tasks that are representative of the scope of the listed variables in accordance with relevant maintenance documentation while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and repair applications associated with aircraft maintenance. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure.

Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft structure is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. Ability to interpret inspection and repair procedures and specifications and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads and aerodynamic requirements.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision across the variables in the Range Statement as follows:

- Inspection and/or testing of at least one item from each of groups 1 to 6
- Recognition of each type of damage 7 to 10
- One repair task from each of groups 11 to 18

This shall be established via the records in the Log of Industrial Experience and Achievement.

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment using tools and

EVIDENCE GUIDE	
	equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Inspection and repair of aircraft structure	<i>Inspection of aircraft structure includes:</i> 1. Non-ferrous and ferrous alloys and composite (FRP) materials used in aircraft construction 2. Structural fastening and attachment hardware and/or devices 3. Seals, sealants 4. Glass, moulded plastics 5. Application of NDI techniques 6. Doors, hinges and locking mechanisms for damage/misalignment. <i>Damage or defects may include:</i> 7. Impact damage 8. Fatigue cracking 9. Corrosion

RANGE STATEMENT	
	10. Delamination of composites and bonded structures <i>Structural repairs may include the following:</i> 11. Remove corrosion by chemical and mechanical methods 12. Restore protective coatings 13. Apply sealants and jointing compounds 14. Freehand precision hole generation 15. Remove and install structural hardware and fastening devices 16. Remove and replace bushes, bearings and bearing surfaces 17. Metal scab patch, flush, splice, lap and formed section repair 18. Composite external patch, scarf and stepped repairs.
Specialist advice	<i>Specialist advice is obtained from:</i> • Supervisors • Specialist structures personnel
Documentation	<i>Relevant maintenance documentation includes:</i> • Servicing Schedules • Maintenance manuals • Applicable Defence regulations and instructions
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance including special inspections required after events such as heavy landings, overstress or flight through heavy turbulence. • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA340A Lay out and set up aircraft systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the basic design and schematic layout of aircraft systems, including mechanical, hydraulic, pneumatic and fuel systems. A basic hydraulic system is set up and operated. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	Competency in this unit requires application of basic knowledge of aircraft system design and schematic layout, including the relative advantages of the different types of system. The candidate should be able to select appropriate types of systems for given applications and sketch the schematic layout of systems given a list of components. A simple hydraulic system will also be set up and operated.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and lay out schematically aircraft mechanical systems	1.1. <i>Mechanical system applications</i> in aircraft design and their relative advantages and disadvantages compared to other system types are identified. 1.2. Components of mechanical systems are identified. 1.3. A mechanical system is selected for an application, the schematic layout is sketched and all components are labelled. 1.4. Mechanical system maintenance requirements are identified.
2. Select and lay out schematically aircraft hydraulic systems	2.1. <i>Hydraulic system applications</i> in aircraft design, their operation and their relative advantages and disadvantages compared to other system types are

ELEMENT	PERFORMANCE CRITERIA
	identified. 2.2. Aircraft hydraulic fluids, their characteristics and handling precautions are identified. 2.3. Components of hydraulic systems are identified and their operation is described in general terms. 2.4. A hydraulic system is selected for an application, the schematic layout is sketched and all components are labelled. 2.5. Hydraulic system maintenance requirements are identified.
3. Select and lay out schematically aircraft pneumatic systems	3.1. Pneumatic system applications in aircraft design, their operation and their relative advantages and disadvantages compared to other system types are identified. 3.2. Components of pneumatic systems are identified and their operation is described in general terms. 3.3. A pneumatic system is selected for an application, the schematic layout is sketched and all components are labelled. 3.4. Pneumatic system maintenance requirements are identified.
4. Select and lay out schematically aircraft fuel storage and distribution systems	4.1. Typical fuel storage and distribution systems used in aircraft design are identified. 4.2. Components of fuel storage and distribution systems are identified and their operation is described. 4.3. A fuel storage and distribution system is selected for an application, the schematic layout is sketched and all components are labelled. 4.4. Types of aircraft fuel, their characteristics and handling precautions are identified. 4.5. Fuel storage and distribution system maintenance requirements are identified.
5. Set up and operate a simple hydraulic system	5.1. The hydraulic system is sketched and all components are labelled. 5.2. Required components are obtained. 5.3. The system is assembled and operated.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- laying out a typical aircraft mechanical system
- laying out a typical aircraft hydraulic system
- laying out a typical aircraft pneumatic system
- laying out a typical fuel storage and distribution system
- setting up and operating a basic hydraulic system
- applying relevant OH&S precautions

Required knowledge

Look for evidence that confirms knowledge of:

- fluid power principles
- plumbing identification marking
- mechanical, hydraulic and pneumatic aircraft systems, their components and maintenance requirements
- the relative advantages and disadvantages of mechanical, hydraulic and pneumatic systems
- hydraulic fluid types, characteristics and handling precautions
- aircraft fuel storage and distribution systems and components thereof
- aircraft fuels, their characteristics and handling precautions
- OH&S precautions relating to aircraft systems and their operation

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply basic knowledge of aircraft system design and layout for a range of aircraft applications. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, teacher's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency
Context of and specific resources for assessment	This unit may be assessed off the job in a training environment equipped to provide exposure to the range of system types and provide for the layout, set-up and operation of basic hydraulic systems. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	Application of this unit may relate to individual or team related activities

RANGE STATEMENT	
Mechanical system applications	<i>Mechanical system applications may include:</i> • flight controls • flap operation • nose wheel steering • landing gear door operation • entrance door mechanisms
Components of mechanical systems	<i>Components of mechanical systems may include:</i> • cables • chains • sprockets • pulleys • fairleads • cable tensioners • gearboxes • screwjacks • rods • universal joints • constant velocity joints • clutches • bearings and bushes
Hydraulic system applications	Hydraulic system applications may include: • flight controls • flap and spoiler operation • landing gear retraction and extension • brakes (including anti-skid) • nose wheel steering • shimmy damping • door operation
Components of hydraulic systems	<i>Components of hydraulic systems may include:</i> • pumps • plumbing • valves (manual and electrically operated) • actuators • motors • check valves • pressure gauges (direct reading and electrical) • electrical control circuit micro switches • reservoirs

RANGE STATEMENT	
	• accumulators • filters • heat exchangers
Pneumatic system applications	<i>Pneumatic system applications may include:</i> • landing gear retraction and extension • pneudraulic emergency systems for landing gear extension and brakes • engine bleed air • engine starting • anti-icing • de-icing • pressurisation • air cycle air conditioning
Components of pneumatic systems	<i>Components of pneumatic systems may include:</i> • precoolers • pressure regulator and shutoff valves • temperature modulating valve • check valves • over-pressure valves • temperature regulating valves • underloading valves • shuttle valves • back pressure valves • outflow valves • moisture separators • chemical driers • filters • mechanical compressors • compressed air bottles • de-icing boots • ducting
Components of fuel storage and distribution systems	<i>Components of fuel storage and distribution systems may include:</i> • integral fuel cells • rigid and flexible fuel cells • external fuel tanks • rigid and flexible plumbing and couplings • manifolds

RANGE STATEMENT	
	• selector valves • anti-surge valves • anti-gravity valves • fuel quantity indication • fuel flow indication • boost pumps • transfer pumps • filters • strainers • fuel heaters
Required components	<i>Required components may include:</i> • hydraulic rig • manual selector valve • filter • accumulator • check valve • linear actuators • rigid and flexible plumbing

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aeronautical engineering

Co-requisite units

Co-requisite units		

MEA341A Apply basic aircraft design characteristics

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the aerodynamic shape and structure of aircraft. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of basic knowledge of aerodynamic shape and structural methods. Applications include aeroplanes and rotary wing aircraft

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101A	Interpret occupational health and safety practices in aviation maintenance
	MEA107A	Interpret and use aviation maintenance industry manuals and specifications
	MEA109A	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Research and evaluate aeroplane aerodynamic shape	1.1. <i>Common wing plan forms</i> are identified and relative advantages and disadvantages are evaluated. 1.2. <i>Common wing configurations</i> are identified and relative advantages and disadvantages are identified. 1.3. Aerofoil characteristics are discussed in terms of aircraft performance. 1.4. Aeroplane stability and control is discussed in terms of aerodynamic design. 1.5. Types of primary and secondary flight control surfaces are identified and control balancing is discussed. 1.6. Types of lift augmentation device are identified and compared. 1.7. Factors that affect an aircraft in subsonic and high speed flight are identified.
2. Research and evaluate rotary wing aerodynamic design	2.1. Identify <i>common rotor configurations</i> and discuss their aerodynamic characteristics 2.2. Discuss rotary wing aircraft control and stability.
3. Research and evaluate basic aircraft	3.1. Identify the loads acting on an aircraft structure. 3.2. Identify and compare the methods of construction of

ELEMENT	PERFORMANCE CRITERIA
structural design	airframes and power plant support structures. 3.3. Identify the materials of construction commonly used in aircraft structures and discuss their relative advantages and disadvantages. 3.4. Fabrication methods commonly used in aircraft structure are identified and discussed. 3.5. Maintenance requirements for aircraft structure are identified.
4. Research and evaluate basic landing gear design and construction.	4.1. The <i>configurations of landing gear</i> are identified and discussed in terms of relative advantages and disadvantages. 4.2. The relative benefits of fixed and retractable landing gear are identified and discussed. 4.3. Construction materials used in landing gear components are identified and discussed.
5. Apply basic aircraft design characteristics	5.1. Given required aircraft use and performance characteristics determine an appropriate aerodynamic shape. 5.2. An appropriate method of construction, materials of construction and fabrication method are proposed. 5.3. An appropriate landing gear configuration is proposed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying basic aircraft design characteristics

Required knowledge

Look for evidence that confirms knowledge of:

- theory of flight, including rotary wing
- loads acting on aircraft structures and structural fatigue, including rotary wing
- aircraft design characteristics, including rotary wing

REQUIRED SKILLS AND KNOWLEDGE

- types of aircraft structure
- methods of aircraft construction
- materials of construction
- structural maintenance requirements
- use of NDT in structural maintenance
- basic landing gear design characteristics
- use of ultra high strength steels in landing gear design and related maintenance requirements

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to identify and apply basic aircraft design characteristics. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, teacher's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Context of and specific resources for assessment

This unit may be assessed off the job in a training environment equipped to provide exposure to the relevant aircraft design characteristics and to theory of flight. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The

EVIDENCE GUIDE	
	assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	Application of this unit may relate to individual or team related activities
Common wing plan forms	<i>Common wing plan forms may include:</i> • straight • tapered • swept • delta • variable geometry • canard
Common wing configurations	<i>Common wing configurations may include:</i> • mid-wing • low wing • high wing
Common rotor configurations	<i>Common rotor configurations may include:</i> • main rotor and tail rotor • two main rotors • two blade main rotor • multiple blade main rotor • hinged main rotor blades

RANGE STATEMENT	
	rigid rotor
Configurations of landing gear	<i>Configurations of landing gear may include:</i> - tricycle - tail wheel - tail skid - floats - skis - helicopter skids - helicopter wheels and brakes

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aeronautical engineering

Co-requisite units

Co-requisite units		

MEA342A Apply basic aircraft power plant design characteristics

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of Diploma and Advanced Diploma training pathways. It covers the basics of aircraft power plant selection and propulsion. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of basic knowledge of propulsion and power plant selection Applications include aeroplanes and rotary wing aircraft, piston engines and propellers/rotors, turbo prop, gas turbines and gas turbine/rotor

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA109B	Perform basic hand skills, standard

Prerequisite units		
		trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Research and evaluate the types of aeroplane and rotary wing aircraft power plant and their relative advantages and disadvantages	1.1. The <i>types of aeroplane and rotary wing aircraft power plant</i> are identified and compared in terms of relative advantages and disadvantages. 1.2. <i>Types of propeller</i> are identified and compared in terms of relative advantages and disadvantages. 1.3. Turbojet and turbofan performance is compared in terms of relative advantages and disadvantages. 1.4. Maintenance requirements for aircraft power plants are identified.
2. Apply basic power plant and propulsion system selection processes	2.1. Given required aeroplane use and performance characteristics determine an appropriate type of power plant. 2.2. Select an appropriate type of propulsion system. 2.3. Given required rotary wing aircraft use and performance characteristics determine an appropriate type of power plant.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying basic power plant and propulsion system design characteristics

Required knowledge

Look for evidence that confirms knowledge of:

- basic power plant characteristics
- basic propeller theory and characteristics
- use of NDT in power plant maintenance
- power plant maintenance requirements including the use of engine condition monitoring

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to identify and apply basic power plant and propulsion system design characteristics. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct

EVIDENCE GUIDE	
	observation, teacher's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed off the job in a training environment equipped to provide exposure to the relevant aircraft design characteristics and to theory of flight. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials. The assessment environment should not disadvantage the candidate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to individual or team related activities
Types of aeroplane and rotary wing aircraft power plant	<i>Types of aeroplane and rotary wing aircraft power plant may include:</i> • piston engine (petrol or diesel) • rotary • turboprop or gas turbine and rotor • turbofan • turbojet

RANGE STATEMENT**Types of propeller***Types of propeller may include:*

- fixed pitch
- adjustable pitch
- constant speed
- contra-rotating
- tractor
- pusher

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aeronautical engineering

Co-requisite units**Co-requisite units**

MEA343B Remove and install avionic system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the B1 Mechanical Aircraft Maintenance Engineer licensing pathway under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines. It covers the competencies required for the removal and installation of avionic system components and certification of tasks where system serviceability can be verified without the use of specialist off-aircraft test equipment.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance documentation/publications in the removal, installation and task certification of avionic systems components where system serviceability can be established by a simple self-test facility, other on-board test systems/equipment or by simple ramp test equipment. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA227C	Test and troubleshoot aircraft electrical systems and components

Prerequisite units		
		OR
	MEA211C	Inspect, test and troubleshoot advanced aircraft electrical systems and components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove avionic system components	1.1 System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety. 1.2 Avionic component removal is carried out in accordance with the applicable maintenance manual. 1.3 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.4 Removed components are tagged and packaged in accordance with specified procedures.
2. Install avionic system components and verify system	2.1 Avionic components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life.

ELEMENT	PERFORMANCE CRITERIA
serviceability	2.2 Installation of avionic components is performed in accordance with the applicable maintenance manual and regulatory requirements. 2.3 System is reinstated to correct operational condition and is <i>tested for serviceability</i>. 2.4 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures and regulatory requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- locating and identifying avionic components that are part of instrument and radio systems
- Determining that component and system serviceability can be confirmed by a simple self-test facility, other on-board test systems/equipment or by simple ramp test equipment requiring a simple go/no go decision
- Application of relevant occupational health and safety (OHS) practices
- Component attachment methods
- Connection of hardware and plugs
- Handling precautions for electrostatic sensitive devices
- The use of approved maintenance documentation and aircraft publications relating to avionic systems
- Using built-in test equipment to confirm system serviceability (this may involve the operation of specific built-in test equipment, on-board maintenance systems and Integrated Modular Avionic modules)

Required knowledge

Look for evidence that confirms knowledge of:

- Electronic fundamentals
- Digital techniques relating to electronic instrument systems
- Engine indication systems
- The operation of built-in test equipment
- On-board maintenance systems

REQUIRED SKILLS AND KNOWLEDGE

- Integrated Modular Avionics and the interface with hydraulic, fuel and pneumatic systems

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove and install avionic components and verify system serviceability through the use of built-in test equipment or similar on-board systems and/or off-aircraft test equipment that provides a simple go/no go decision while observing all relevant safety and component handling precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft avionic system components as listed in the Range Statement. An understanding of the attachment methods, connection of hardware, and system test requirements as they relate to the work must be demonstrated before undertaking any action.

The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of avionic components, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The scope of this Unit is restricted to removing and installing avionic components from systems whose serviceability can be established and certified through the use of built-in test equipment or any other on-board system that can verify correct system operation. The use of off-aircraft test equipment is limited to items that provide a simple go/no go decision.
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Avionic components	<i>Avionic components include:</i> • components/line replaceable units from electronic instrument systems

RANGE STATEMENT	
	• components/line replaceable units from engine indication systems • communication system components • navigation system components • software updates to avionic systems where serviceability can be determined by a simple test
Tested for serviceability	<i>Tested for serviceability means:</i> • confirming system serviceability through the operation of built-in test equipment or any other on-board system that can confirm correct operation • using only off-aircraft test equipment that provides a simple go/no go decision regarding system serviceability

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA344A Remove and install aircraft components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to remove and install aircraft components that are within the privileges of the Aircraft Maintenance Engineer A Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the removal and installation of aircraft components, including hydro-mechanical and mechanical components, and emergency equipment that is within the privileges of the A Licence. Applications include component removal and installation on both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove landing gear components	1.1. The aircraft is jacked as specified in the maintenance manual for <i>landing gear component</i> removal. 1.2. Removal of components is carried out in accordance with the applicable maintenance

ELEMENT	PERFORMANCE CRITERIA
	publications. 1.3. Required maintenance documentation is accurately completed and correctly processed. 1.4. Removed components are tagged, sealed and packaged in accordance with standard organisational procedures.
2. Remove hydro-mechanical components	2.1. Hydro-mechanical system is rendered safe and prepared in accordance with the applicable maintenance publication, including fitment of isolation tags where necessary to ensure personal safety. 2.2. Removal of hydro-mechanical components is carried out in accordance with the applicable maintenance publications. 2.3. Required maintenance documentation is accurately completed and correctly processed. 2.4. Removed components are tagged, sealed and packaged in accordance with standard organisational procedures.
3. Remove mechanical components/emergency equipment	3.1. Applicable safety precautions are identified and observed for the removal and handling of components. 3.2. Removal of mechanical components/emergency equipment is carried out in accordance with the applicable maintenance publications. 3.3. Required maintenance documentation is accurately completed and correctly processed. 3.4. Removed components and/or items of emergency equipment are tagged, sealed and packaged in accordance with standard organisational procedures.
4. Install landing gear components	4.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 4.2. Component installation is carried out in accordance with applicable maintenance publications. 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
5. Install hydro-mechanical	5.1. Components to be installed are checked to confirm correct part numbers, serviceability and

ELEMENT	PERFORMANCE CRITERIA
components	modification status. 5.2. Component installation is carried out in accordance with applicable maintenance publications. 5.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
6. Install mechanical components/emergency equipment	6.1. Components to be installed are checked to confirm correct part numbers, serviceability and modification status. 6.2. Component installation is carried out in accordance with applicable maintenance publications. 6.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of applicable OH&S procedures
- jacking of aircraft for landing gear component removal
- use of hand skills and tools to perform component removal and installation tasks
- correct installation and securing of aircraft hardware
- inspection and correct installation of bearings
- safe handling of heavy components
- the use of maintenance publications to prepare the aircraft for component removal and installation and correct interpretation of removal and installation instructions
- application of standard procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool usage and installation/securing of aircraft hardware

REQUIRED SKILLS AND KNOWLEDGE

- how to locate and correctly remove and install components
- how to locate and correctly remove and install items of emergency equipment
- OH&S procedures relating to component removal and installation and handling of heavy components
- relevant maintenance publications
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use maintenance publications and applicable tools to remove and install specified landing gear, hydro-mechanical and mechanical components and emergency equipment while applying all relevant OH&S procedures and standards processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that system cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types, but must cover a sufficient range of tasks to demonstrate familiarity with attachment methods, connection hardware and couplings peculiar to each type of system, and of safe handling of heavy components. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be

EVIDENCE GUIDE	
	demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under supervision without intervention on at least one component from each of Groups 1 to 8 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Landing gear components	<i>Landing gear components may include:</i> 1. Main and nose wheel assemblies 2. Brake units
Components	<i>Hydro-mechanical components may include:</i> 3. Toilet system components excluding gate

RANGE STATEMENT	
	valves 4. Windscreen wiper blades <i>Mechanical components/emergency equipment may include:</i> 5. Passenger and crew seats, seat belts and harnesses 6. Internal doors excluding any doors that form part of the pressure hull 7. Trim panels, linings, cabin equipment and consoles 8. Applicable emergency equipment such as life jackets, rafts, location transmitters/beacons
Application	Application of this unit may relate to scheduled or unscheduled maintenance activities.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

Co-requisite units		

MEA345A Perform scheduled line maintenance activities on gas turbine engine fixed wing aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to perform line maintenance activities including flight servicing and scheduled aircraft line maintenance checks that are within the privileges of the Aircraft Maintenance Engineer A1 Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A1 Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the performance of scheduled servicing up to the Weekly Check or equivalent, pre and post-flight servicing activities and the application of aircraft ground handling procedures. Applications include the performance of flight servicing and scheduled maintenance checks on gas turbine engine fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for flight	1.1. Aircraft is positioned as required. 1.2. Ground locks, aircraft support and safety devices and covers are removed and stowed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	<i>maintenance documentation.</i> 1.3. Aircraft tie-down devices are removed and stowed/stored.
2. Inspect aircraft and systems	2.1. Preparation of the aircraft and systems is appropriate to allow for proper inspection. 2.2. Aircraft and systems are visually or physically checked for external signs of defects in accordance with applicable maintenance documentation.
3. Replenish aircraft systems	3.1. Fluid level checks and replenishments are carried out in accordance with maintenance documentation requirements. 3.2. Maintenance of gaseous levels (oxygen, nitrogen and compressed air) is carried out in accordance with maintenance documentation requirements. 3.3. Role equipment/components requiring pre-flight replacement are changed as required by maintenance documentation. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Perform scheduled line maintenance checks	4.1. Inspection requirements are determined from maintenance documentation. 4.2. Aircraft structure and systems are visually inspected for external signs of defects in accordance with applicable maintenance documentation. 4.3. Defects are recorded and reported in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ground handling of aircraft
- use of hand skills and tools to perform flight servicing activities
- correct installation and securing of aircraft hardware

REQUIRED SKILLS AND KNOWLEDGE

- location, use and correct stowage of aircraft safety and security equipment (includes ground locks, covers, support and safety devices and tie-down devices)
- application of ground power (where applicable)
- inspection of structure for damage and deterioration
- recognition of external signs of component damage, leakage and security in aircraft systems
- recognition of visual signs of damage, leakage and security with regard to engines and propellers (where applicable)
- refuelling the aircraft with the correct type, quantity and distribution of fuel
- checking and replenishing fluid level using the correct fluids
- recharging of gaseous levels using the correct support equipment and procedures
- lubrication of components
- checking fire protection systems (where applicable) for correct gas charge levels
- replacing role equipment requiring pre-flight replacement
- the use of maintenance data and manuals to determine flight servicing requirements and procedures
- application of standard procedures
- observance of all relevant OH&S procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool usage and installation/securing of aircraft hardware
- aircraft structural concepts and structure to the extent required to be able to recognise typical types of structural damage and deterioration during flight servicing activities and scheduled inspections up to the level of a Weekly Check or equivalent
- system layout, operation and typical external signs of faults to the extent required to perform flight servicing and scheduled inspections up to the level of a Weekly Check or equivalent
- types and characteristics of fuels and fuel additives
- types and characteristics of lubricants
- types and characteristics of hydraulic fluids
- OH&S procedures relating to flight servicing activities
- basic theory of flight relating to fixed wing aircraft, including stability and control
- the function of on-board maintenance systems
- gas turbine engine and propeller basic theory, installation and operation
- relevant principles of mathematics and physics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform flight servicing activities on the occasions as listed in the variables and scheduled line maintenance checks (up to a Weekly Check or equivalent) that are relevant to the organisation in accordance with relevant maintenance documentation, while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the specific aspects of the aircraft flight servicing or scheduled line maintenance task are checked to ensure quality and safety standards are fully observed, understood and complied with. Safety precautions applicable to the system being maintained are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action.

Evidence of knowledge of system operation, recognition of defects and completion of documentation, the relationship of individual components and the links with other systems will be necessary to the extent required for completion of flight servicing and scheduled line maintenance task before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under supervision but without intervention on the flight servicing and scheduled line maintenance tasks listed in Groups 1 to 5 of the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment using procedures, tools and equipment specified in maintenance documentation. It is also expected that

EVIDENCE GUIDE	
	general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable maintenance activities	<i>Applicable maintenance activities include:</i> 1. Preparation for flight following maintenance 2. Before flight servicing 3. After flight servicing 4. Turn around servicing 5. Scheduled line maintenance activities up to the level of a Weekly Check or specified equivalent
Maintenance documentation	<i>Maintenance documentation may include:</i> • maintenance manuals • servicing schedules • applicable airworthiness regulations • aircraft maintenance program
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA346A Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to perform line maintenance activities including flight servicing and scheduled aircraft line maintenance checks that are within the privileges of the Aircraft Maintenance Engineer A3 Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A3 Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the performance of scheduled servicing up to the Weekly Check or equivalent, pre and post-flight servicing activities and the application of aircraft ground handling procedures. Applications include the performance of flight servicing and scheduled maintenance checks on gas turbine engine rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for flight	1.1. Aircraft is positioned as required. 1.2. Ground locks, aircraft support and safety devices and covers are removed and stowed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	maintenance documentation. 1.3. Aircraft tie-down devices are removed and stowed/stored.
2. Inspect aircraft and systems	2.1. Preparation of the aircraft and systems is appropriate to allow for proper inspection. 2.2. Aircraft and systems are visually or physically checked for external signs of defects in accordance with applicable maintenance documentation.
3. Replenish aircraft systems	3.1. Fluid level checks and replenishments are carried out in accordance with maintenance documentation requirements. 3.2. Maintenance of gaseous levels (oxygen, nitrogen and compressed air) is carried out in accordance with maintenance documentation requirements. 3.3. Role equipment/components requiring pre-flight replacement are changed as required by <i>maintenance documentation</i>. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Perform scheduled line maintenance checks	4.1. Inspection requirements are determined from maintenance documentation. 4.2. Aircraft structure and systems are visually inspected for external signs of defects in accordance with applicable maintenance documentation. 4.3. Defects are recorded and reported in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ground handling of aircraft
- use of hand skills and tools to perform flight servicing activities
- correct installation and securing of aircraft hardware

REQUIRED SKILLS AND KNOWLEDGE

- location, use and correct stowage of aircraft safety and security equipment (includes ground locks, covers, support and safety devices and tie-down devices)
- application of ground power (where applicable)
- inspection of structure for damage and deterioration
- recognition of external signs of component damage, leakage and security in aircraft systems
- recognition of visual signs of damage, leakage and security with regard to engines, transmissions and rotors
- refuelling the aircraft with the correct type, quantity and distribution of fuel
- checking and replenishing fluid level using the correct fluids
- recharging of gaseous levels using the correct support equipment and procedures
- lubrication of components
- checking fire protection systems (where applicable) for correct gas charge levels
- replacing role equipment requiring pre-flight replacement
- the use of maintenance data and manuals to determine flight servicing requirements and procedures
- application of standard procedures
- observance of all relevant OH&S procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool usage and installation/securing of aircraft hardware
- aircraft structural concepts and structure to the extent required to be able to recognise typical types of structural damage and deterioration during flight servicing activities and scheduled inspections up to the level of a Weekly Check or equivalent
- system layout, operation and typical external signs of faults to the extent required to perform flight servicing and scheduled inspections up to the level of a Weekly Check or equivalent
- types and characteristics of fuels and fuel additives
- types and characteristics of lubricants
- types and characteristics of hydraulic fluids
- OH&S procedures relating to flight servicing activities
- basic theory of flight relating to rotary wing aircraft, including stability and control
- the function of on-board maintenance systems
- gas turbine engine basic theory, installation and operation
- engine transmission and rotor basic theory, installation and operation
- relevant principles of mathematics and physics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform flight servicing activities on the occasions as listed in the variables and scheduled line maintenance checks (up to a Weekly Check or equivalent) that are relevant to the organisation in accordance with relevant maintenance documentation, while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the specific aspects of the aircraft flight servicing or scheduled line maintenance task are checked to ensure quality and safety standards are fully observed, understood and complied with. Safety precautions applicable to the system being maintained are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action.

Evidence of knowledge of system operation, recognition of defects and completion of documentation, the relationship of individual components and the links with other systems will be necessary to the extent required for completion of flight servicing and scheduled line maintenance task before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under supervision but without intervention on the flight servicing and scheduled line maintenance tasks listed in Groups 1 to 5 of the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment using procedures, tools and equipment specified in maintenance documentation. It is also expected that

EVIDENCE GUIDE	
	general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note:	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable maintenance activities	<i>Applicable maintenance activities include:</i> 1. Preparation for flight following maintenance 2. Before flight servicing 3. After flight servicing 4. Turn around servicing 5. Scheduled line maintenance activities up to the level of a Weekly Check or specified equivalent
Maintenance documentation	<i>Maintenance documentation may include:</i> • maintenance manuals • servicing schedules • applicable airworthiness regulations • aircraft maintenance program
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA347A Perform scheduled line maintenance activities on piston engine fixed wing aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to perform line maintenance activities including flight servicing and scheduled aircraft line maintenance checks that are within the privileges of the Aircraft Maintenance Engineer A2 Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A2 Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the performance of scheduled servicing up to the Weekly Check or equivalent, pre and post-flight servicing activities and the application of aircraft ground handling procedures. Applications include the performance of flight servicing and scheduled maintenance checks on piston engine fixed wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for flight	1.1. Aircraft is positioned as required. 1.2. Ground locks, aircraft support and safety devices and covers are removed and stowed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	<i>maintenance documentation.</i> 1.3. Aircraft tie-down devices are removed and stowed/stored.
2. Inspect aircraft and systems	2.1. Preparation of the aircraft and systems is appropriate to allow for proper inspection. 2.2. Aircraft and systems are visually or physically checked for external signs of defects in accordance with applicable maintenance documentation.
3. Replenish aircraft systems	3.1. Fluid level checks and replenishments are carried out in accordance with maintenance documentation requirements. 3.2. Maintenance of gaseous levels (oxygen, nitrogen and compressed air) is carried out in accordance with maintenance documentation requirements. 3.3. Role equipment/components requiring pre-flight replacement are changed as required by maintenance documentation. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Perform scheduled line maintenance checks	4.1. Inspection requirements are determined from maintenance documentation. 4.2. Aircraft structure and systems are visually inspected for external signs of defects in accordance with applicable maintenance documentation. 4.3. Defects are recorded and reported in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ground handling of aircraft
- use of hand skills and tools to perform flight servicing activities
- correct installation and securing of aircraft hardware

REQUIRED SKILLS AND KNOWLEDGE

- location, use and correct stowage of aircraft safety and security equipment (includes ground locks, covers, support and safety devices and tie-down devices)
- application of ground power (where applicable)
- inspection of structure for damage and deterioration
- recognition of external signs of component damage, leakage and security in aircraft systems
- recognition of visual signs of damage, leakage and security with regard to engines and propellers
- refuelling the aircraft with the correct type, quantity and distribution of fuel
- checking and replenishing fluid level using the correct fluids
- recharging of gaseous levels using the correct support equipment and procedures
- lubrication of components
- checking fire protection systems (where applicable) for correct gas charge levels
- replacing role equipment requiring pre-flight replacement
- the use of maintenance data and manuals to determine flight servicing requirements and procedures
- application of standard procedures
- observance of all relevant OH&S procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool usage and installation/securing of aircraft hardware
- aircraft structural concepts and structure to the extent required to be able to recognise typical types of structural damage and deterioration during flight servicing activities and scheduled inspections up to the level of a Weekly Check or equivalent
- system layout, operation and typical external signs of faults to the extent required to perform flight servicing and scheduled inspections up to the level of a Weekly Check or equivalent
- the function of on-board maintenance systems
- types and characteristics of fuels and fuel additives
- types and characteristics of lubricants
- types and characteristics of hydraulic fluids
- OH&S procedures relating to line maintenance activities
- basic theory of flight relating to fixed wing aircraft, including stability and control
- piston engine and propeller basic theory, installation and operation
- factors influencing piston engine performance
- relevant principles of mathematics and physics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform flight servicing activities on the occasions as listed in the variables and scheduled line maintenance checks (up to a Weekly Check or equivalent) that are relevant to the organisation in accordance with relevant maintenance documentation, while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the specific aspects of the aircraft flight servicing or scheduled line maintenance task are checked to ensure quality and safety standards are fully observed, understood and complied with. Safety precautions applicable to the system being maintained are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action.

Evidence of knowledge of system operation, recognition of defects and completion of documentation, the relationship of individual components and the links with other systems will be necessary to the extent required for completion of flight servicing and scheduled line maintenance task before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under supervision but without intervention on the flight servicing and scheduled line maintenance tasks listed in Groups 1 to 5 of the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment using procedures, tools and equipment specified in maintenance documentation. It is also expected that

EVIDENCE GUIDE	
	general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable maintenance activities include:	<i>Applicable maintenance activities include:</i> 1. Preparation for flight following maintenance 2. Before flight servicing 3. After flight servicing 4. Turn around servicing 5. Scheduled line maintenance activities up to the level of a Weekly Check or specified equivalent
Maintenance documentation	<i>Maintenance documentation may include:</i> • maintenance manuals • servicing schedules • applicable airworthiness regulations • aircraft maintenance program
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the

RANGE STATEMENT

	enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA348A Perform scheduled line maintenance activities on piston engine rotary wing aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to perform line maintenance activities including flight servicing and scheduled aircraft line maintenance checks that are within the privileges of the Aircraft Maintenance Engineer A4 Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A4 Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and standard trade practices in the performance of scheduled servicing up to the Weekly Check or equivalent, pre and post-flight servicing activities and the application of aircraft ground handling procedures. Applications include the performance of flight servicing and scheduled maintenance checks on piston engine rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for flight	1.1. Aircraft is positioned as required. 1.2. Ground locks, aircraft support and safety devices and covers are removed and stowed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	<i>maintenance documentation.</i> 1.3. Aircraft tie-down devices are removed and stowed/stored.
2. Inspect aircraft and systems	2.1. Preparation of the aircraft and systems is appropriate to allow for proper inspection. 2.2. Aircraft and systems are visually or physically checked for external signs of defects in accordance with applicable maintenance documentation.
3. Replenish aircraft systems	3.1. Fluid level checks and replenishments are carried out in accordance with maintenance documentation requirements. 3.2. Maintenance of gaseous levels (oxygen, nitrogen and compressed air) is carried out in accordance with maintenance documentation requirements. 3.3. Role equipment/components requiring pre-flight replacement are changed as required by maintenance documentation. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Perform scheduled line maintenance checks	4.1. Inspection requirements are determined from maintenance documentation. 4.2. Aircraft structure and systems are visually inspected for external signs of defects in accordance with applicable maintenance documentation. 4.3. Defects are recorded and reported in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- ground handling of aircraft
- use of hand skills and tools to perform flight servicing activities
- correct installation and securing of aircraft hardware

REQUIRED SKILLS AND KNOWLEDGE

- location, use and correct stowage of aircraft safety and security equipment (includes ground locks, covers, support and safety devices and tie-down devices)
- application of ground power (where applicable)
- inspection of structure for damage and deterioration
- recognition of external signs of component damage, leakage and security in aircraft systems
- recognition of visual signs of damage, leakage and security with regard to engines, transmissions and rotors
- refuelling the aircraft with the correct type, quantity and distribution of fuel
- checking and replenishing fluid level using the correct fluids
- recharging of gaseous levels using the correct support equipment and procedures
- lubrication of components
- checking fire protection systems (where applicable) for correct gas charge levels
- replacing role equipment requiring pre-flight replacement
- the use of maintenance data and manuals to determine flight servicing requirements and procedures
- application of standard procedures
- observance of all relevant OH&S procedures

Required knowledge

Look for evidence that confirms knowledge of:

- standard trade practices relating to tool usage and installation/securing of aircraft hardware
- aircraft structural concepts and structure to the extent required to be able to recognise typical types of structural damage and deterioration during flight servicing activities and scheduled inspections up to the level of a weekly check or equivalent
- system layout, operation and typical external signs of faults to the extent required to perform flight servicing and scheduled inspections up to the level of a Weekly Check or equivalent
- the function of on-board maintenance systems
- types and characteristics of fuels and fuel additives
- types and characteristics of lubricants
- types and characteristics of hydraulic fluids
- OH&S procedures relating to flight servicing activities
- basic theory of flight relating to rotary wing aircraft, including stability and control
- piston engine basic theory, installation and operation
- factors influencing piston engine performance
- engine transmission and rotor basic theory, installation and operation
- relevant principles of mathematics and physics

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to perform flight servicing activities on the occasions as listed in the variables and scheduled line maintenance checks (up to a Weekly Check or equivalent) that are relevant to the organisation in accordance with relevant maintenance documentation, while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the specific aspects of the aircraft flight servicing or scheduled line maintenance task are checked to ensure quality and safety standards are fully observed, understood and complied with. Safety precautions applicable to the system being maintained are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action.

Evidence of knowledge of system operation, recognition of defects and completion of documentation, the relationship of individual components and the links with other systems will be necessary to the extent required for completion of flight servicing and scheduled line maintenance task before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under supervision but without intervention on the flight servicings and scheduled line maintenance tasks listed in Groups 1 to 5 of the Range Statement that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work environment

EVIDENCE GUIDE	
assessment	using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable maintenance activities	<i>Applicable maintenance activities include:</i> 1. Preparation for flight following maintenance 2. Before flight servicing 3. After flight servicing 4. Turn around servicing 5. Scheduled line maintenance activities up to the level of a Weekly Check or specified equivalent
Maintenance documentation	<i>Maintenance documentation may include:</i> • maintenance manuals • servicing schedules • applicable airworthiness regulations • aircraft maintenance program

RANGE STATEMENT

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector

Competency field

Competency field

Aviation maintenance

Co-requisite units

Co-requisite units

MEA349A Apply basic scientific principles and techniques in aeronautical engineering situations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers applying basic scientific principles and techniques to appropriate aeronautical engineering situations

Application of the Unit

Application of the unit	This unit requires application of basic aeronautical scientific principles and techniques as a member of a design and development or similar in support of the design and development of aeronautical applications. Applications include identifying the range of basic aeronautical scientific principles and techniques relevant to aeronautical engineering, selecting aeronautical principles and techniques for particular applications, applying aeronautical principles and techniques appropriately to engineering tasks, quoting results appropriately

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Research and identify the range of basic scientific principles and techniques relevant to aeronautical engineering	1.1. The basic scientific principles relating to aeronautical engineering are researched and reported on from appropriate <i>sources of information</i> and examination of applications. 1.2. The basic aeronautical techniques and associated technologies, software and hardware required to implement scientific principles relating to <i>aeronautical engineering</i> situations are identified.
2. Select basic aeronautical scientific principles and techniques relevant to particular aeronautical engineering applications	2.1. For particular aeronautical engineering situations, the <i>relevant basic aeronautical scientific techniques and principles</i> can be selected. 2.2. For particular aeronautical engineering situations, the relevant basic aeronautical techniques and associated technologies, software and hardware can be selected.
3. Apply the relevant basic aeronautical scientific principles and techniques appropriately	3.1. The basic aeronautical scientific principles are applied in a consistent and appropriate manner to obtain any required solution. 3.2. Appropriate calculations and coherent units are used in the solution of engineering calculations.

ELEMENT	PERFORMANCE CRITERIA
	3.3. Significant figures are used in engineering calculations. 3.4. The basic aeronautical techniques and associated technologies, software and hardware are applied in a consistent and appropriate manner to obtain required solutions.
4. Quote the results of the application of the basic aeronautical scientific principles and basic techniques correctly	4.1. For applications involving engineering calculations the solution is quoted in an appropriate style. 4.2. For applications not involving engineering calculations the solution is quoted in an appropriate style.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- selecting appropriate basic aeronautical scientific principles to suit specific applications
- selecting appropriate basic aeronautical techniques and associated technologies, software and hardware to suit specific applications
- applying basic aeronautical scientific principles to particular engineering situations
- applying and manipulating appropriate formulas for applications involving engineering calculations
- applying appropriate calculations to engineering situations
- checking the validity of equations is using dimensional analysis
- applying basic aeronautical techniques and associated technologies, software and hardware in a manner appropriate to the application and identified scientific principles.
- referring solutions to the original aim of the application
- quoting solutions in appropriate units, using appropriate significant figures.
- quoting limitations of solutions, due to assumptions, scientific principles and techniques used
- presenting solutions referring to the original aim of the application.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms knowledge of:

- basic aeronautical scientific principles including:
 - Statics - complete tasks requiring analysis and application of:
 - forces and moments of forces
 - systems of concurrent and non-concurrent forces
 - dry sliding friction
 - Dynamics - complete tasks requiring analysis and application of:
 - Newton's Laws
 - Kinematics and kinetics of uniformly accelerated linear motion
 - Kinematics and kinetics of uniformly accelerated rotation
 - Curvilinear motion and centrifugal force
 - Work, energy, power and torque
 - Mechanical advantage and efficiency
 - Strength of materials - using common aircraft structural materials complete tasks requiring analysis and application of:
 - Axial tension and compression
 - Direct shear
 - Bolted, riveted, bonded and welded connections
 - shear in beams
 - bending stresses and bending deflections (by standard formulas only)
 - Torsion
 - Aerodynamics - complete tasks requiring analysis and application of:
 - Bernoulli's Theorem
 - The atmosphere
 - Aerodynamic forces (lift, drag, weight, thrust)
 - Stability and control (to a level not requiring the application of calculus)
 - Airscrews and propulsion (to a level not requiring the application of calculus)
 - Aircraft performance (to a level not requiring the application of calculus)
 - Fluid mechanics - complete tasks requiring analysis and application of:
 - Properties of fluids including mineral and synthetic hydraulic fluids
 - Fluid statics, Archimedes' Principle, Pascal's Principle
 - Fluid flow - continuity and energy conservation

REQUIRED SKILLS AND KNOWLEDGE

- Fluid power - pumps
- Thermodynamics - complete tasks requiring analysis and application of:
 - Heat transfer principles (conduction, convection, radiation)
 - Perfect gas laws
 - Kinetic theory of gases
 - Laws of thermodynamics
- Control concepts - complete tasks requiring analysis and application of Closed and Open Loop Control
- Electricity and Electronics - complete tasks requiring analysis and application of:
 - Basic electrical concepts
 - Ohm's Law
 - Kirchhoff's Current and Voltage Laws
 - Basic DC circuits
 - Basic power supply, transformer, rectifier, filter, regulator
 - PLC concepts - I/O, timing, counting, programming
 - Electronic devices (discrete) - resistors, diodes, capacitors, inductors, transistors, rectifiers
 - Microprocessor concepts

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply basic scientific principles and techniques in aeronautical engineering situations. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and

Assessors must be satisfied that the candidate can

EVIDENCE GUIDE	
evidence required to demonstrate competency in this unit	competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Method of assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying basic scientific principles and techniques in aeronautical engineering situations or other units requiring the exercise of the skills and knowledge covered by this unit.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT

work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Sources of information</i>	Reference texts, manufacturer's catalogues and industrial magazines, international aerospace organisation publications, websites, use of phone, email and fax information gathering.
<i>Aeronautical engineering</i>	The engineering discipline concerned with the conceptual development, research, design, manufacture, implementation, installation, commissioning and maintenance of aerospace mechanical, hydraulic, pneumatic, fuel and fire products, processes, systems or services for civil and military applications.
<i>Basic aeronautical scientific techniques and principles</i>	Candidates should apply appropriate basic techniques supported by their mathematical skills and introductory knowledge of scientific principles to design, manufacturing, commissioning and maintenance related tasks and projects relating to metal and composite structure, aerodynamic loads, stability, control and performance, mechanical systems and related components, hydraulic systems and related components, pneumatic systems and related components, air cycle air conditioning and pressurization systems and related components, power plant systems and components, and the application and interfacing of electrical and electronic system control. The applications may require the use of one or two basic aeronautical scientific principles together with a fundamental mathematical calculation leading to process, resources and system choices from a limited range of options. Basic techniques include basic hand and power tool operations, machining, fitting, welding, moulding, fabricating, wiring and programming techniques.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Engineering science

Co-requisite units

Co-requisite units		

MEA350A Select and test aeronautical engineering materials

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers selecting appropriate materials and materials and components tests for aeronautical engineering applications.

Application of the Unit

Application of the unit	Applications of this unit include selecting engineering materials and materials tests, sourcing materials data; ensuring appropriate performance and physical standards for aeronautical applications; documenting materials tests, ensured calibration standards; interpreting and documenting materials data sheets as appropriate for mass production, batch production, jobbing shop, and prototyping applications. Activities may be performed as a member of a design and development or engineering support team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify classes of materials, based on properties and materials tests relevant to aeronautical engineering	1.1. Identify <i>classes of materials, based on properties</i>, required for particular <i>aeronautical engineering</i> applications. 1.2. Relate material properties to common production and construction methods and processes. 1.3. Identify common characteristics, faults or flaws in materials and components or product in particular engineering applications. 1.4. Identify test methods for materials and components or product in particular engineering applications. 1.5. Identify specific industrial test standards/codes, calibration requirements, regulations and authorities related to selection of materials and products for particular engineering applications. 1.6. Investigate the role of <i>Australia's national measurement system</i>.
2. Identify and use sources of information on engineering materials, materials	2.1. Identify and use appropriate <i>sources of information</i> on materials. 2.2. Identify and use appropriate sources of information on methods of testing of properties of materials to ensure suitability for a particular application.

ELEMENT	PERFORMANCE CRITERIA
tests and test equipment including manufacturers' catalogues and websites	2.3. Identify and use appropriate sources of information on materials, materials tests, test calibration, test certificates, regulations, standards, standards councils/societies/authorities/regulatory bodies. Investigate and report on the use of <i>standards and codes</i>. 2.4. Identify and use appropriate sources of information on Materials Safety Data Sheets (MSDS).
3. Specify and implement materials for particular aeronautical engineering applications.	3.1. Specify and implement materials for particular applications.
4. Specify and implement methods used to test or obtain the properties of engineering materials	4.1. Specify and implement tests of materials to ensure quality, safety or suitability for a range of applications. Ensure traceability of measurement standard. 4.2. Obtain Test Sheets / certificates for appropriate materials for applications in accordance with organisational procedures and/or codes and regulations. 4.3. Obtain appropriate Materials Safety Data Sheets (MSDS) for applications in accordance with organisational procedures and/or codes and regulations.
5. Report on and record materials design data and methods and results of materials tests	5.1. Report and record materials selections against design functional requirements in accordance with organisational procedures, codes and regulations. Include environmental impact and sustainability assessment. 5.2. Report and record materials tests and test sheets/certificates in accordance with organisational procedures, codes and regulations. Ensure appropriate calibration and traceability. 5.3. Report and record appropriate Materials Safety Data Sheets (MSDS) for applications in accordance with organisational procedures, codes and regulations

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- selecting class of materials for an application based on comparison of properties for a significant range of materials classes
- selecting class of materials for an application suitable to production and construction methods and processes
- identifying, overcoming or compensating for common characteristics, faults or flaws in materials or product
- identifying test methods for materials and components, specific industrial test standards and regulations for particular engineering applications
- identifying test methods for faults or flaws in materials and components or product
- selecting materials following an extensive search of appropriate sources of information including manufacturer's catalogues and websites
- selecting appropriate tests from a range of possible tests, following an extensive search of appropriate sources of information including manufacturer's catalogues and websites
- satisfying applicable standards and regulations for materials and components
- sourcing materials test certificates and using the material properties information from them
- sourcing and implementing Materials Safety Data Sheets
- implementing tests correctly for materials and component faults and properties of materials
- selecting testing methods appropriate to applications
- obtaining appropriate test sheets / certificates for applications
- obtaining appropriate Materials Safety Data Sheets (MSDS) for application
- completing reports, records and design documentation
- addressing environmental impact and sustainability issues
- reporting, recording and filing test reports and documentation
- implementing materials tests and test sheets/certificates, test calibration and traceability

Required knowledge

Look for evidence that confirms knowledge of:

- properties of materials classes
- the effect of material properties on production and construction methods and processes
- the effect of characteristics, faults or flaws in materials on product and processes
- test methods for materials and components, specific industrial test standards,

REQUIRED SKILLS AND KNOWLEDGE

- regulations and authorities related to particular engineering applications
- test methods for faults or flaws in materials and components or product
- methods of accessing and using alternative information sources
- test procedures and typical applications for tests
- sources and uses of information on materials, materials tests, test certificates, regulations, standards, regulatory bodies and industrial authorities
- methods of accessing Materials Safety Data Sheets (MSDS)
- identification of materials for an application based on comparison of properties of materials
- identification of test for an application based on an understanding of its ability to measure specific material or product properties
- significance of test sheets / certificates to applications
- the need for obtaining and filing test sheets / certificates
- significance of MSDSs and relevance of procedures
- materials selections in relation to design functional requirements
- environmental impact and sustainability assessment
- significance of test reports and documentation to applications
- significance of reporting and recording procedures
- significance of materials tests and test sheets/certificates, test calibration and traceability
- significance of MSDS to applications
- significance of reporting and recording procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to select and test aeronautical engineering materials. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

EVIDENCE GUIDE	
	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.
Method of assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with selecting and testing aeronautical engineering materials or other units requiring the exercise of the skills and knowledge covered by this unit.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
<i>Classes of materials, based on properties</i>	Classes of materials: - Non-ferrous metals and alloys - Copper, aluminium, zinc, lead, tin and their alloys; ferrous metals - Carbon steels, alloy steels, cast irons; non-metallic composite materials, bearing materials; lubricants; non-metals - timber, ceramics, polymers and fabrics, adhesives, electrical insulation materials; thermal conductors and insulators; electrical conductors, semiconductors and insulators Properties of materials: - Strength, elasticity, plasticity, malleability, toughness, brittleness, fatigue endurance, mouldability, weldability, machinability, formability, resistance to creep and stress relaxation, resistance to degradation (eg. use of plastic fillers to enhance UV resistance), adhesion; electrical, magnetic, thermal, chemical and optical; material structure and effect on properties, flammability of fabrics Other factors: - Corrosion and corrosion protection methods. - Aging of metals - The effect of manufacturing and construction processes on material properties. - The effect of property enhancement on design (eg. adhesives plus sintering replacing some forging and machining of gears on shafts) - Lay-up methods for composite structures. Cost: - Manufacture of material and source of material; typical applications and possibilities
<i>Aeronautical engineering</i>	The engineering discipline concerned with the conceptual development, research, design, manufacture, implementation, installation, commissioning and maintenance of aerospace mechanical, hydraulic, pneumatic, fuel and fire products, processes, systems or services for civil and military applications
<i>Australia's national measurement</i>	National Standards Commission (legal metrology); Commonwealth Scientific and

RANGE STATEMENT	
<i>system</i>	Research Organisation (physical standards); National Association of Testing Authorities, Aust. (Laboratory accreditation); Standards Australia International Ltd (AS standards specifications)
<i>Standards councils/ societies/ authorities/regulatory bodies</i>	AS: Australian; ASTM: American Society of Testing materials; MIL Spec. (US Military Specification); ASME: American Society of Manufacturing Engineers; ISO : International Standards Organisation Regulatory bodies include Civil Aviation Safety Authority, Australian Defence Force, United States Federal Aviation Authority, European Joint Aviation Authority
<i>Standards and codes</i>	NDT and mechanical test standards; chemical test standards; electrical test standards; compliance test standards for components
<i>Tests of materials</i>	Destructive including tensile, compression, impact, hardness, fatigue, corrosion, stress relaxation and creep, peel resistance (adhesives). Non destructive including hardness, ultrasonics, x-ray, dye penetrant, eddy current, surface friction, conductivity, heat expansion, photoelastic. Heat capacity refractive index, magnetic hysteresis loop.
<i>Traceability</i>	Test calibrations can be traced back to the relevant base unit in the relevant measurement system

Unit Sector(s)

Unit sector	

Competency field

Competency field	Engineering science

Co-requisite units

Co-requisite units		

MEA351A Maintain airframe systems of basic light fixed wing aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain basic light fixed wing aircraft airframe systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot, and replace components of airframe systems of basic light aircraft. Applications include fixed wing aircraft that have fixed undercarriage and a normally aspirated engine driving a fixed pitch propeller or a small gas turbine engine.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Inspect basic light fixed wing airframe systems	1.1. Relevant <i>maintenance documentation</i> and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. <i>Airframe system</i> components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust basic light fixed wing airframe systems and components	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 2.2. Airframe system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System adjustment/rigging is performed in accordance with maintenance manual
3. Troubleshoot basic light fixed wing airframe systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate <i>troubleshooting</i> 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Airframe system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install basic light fixed wing airframe system components	4.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. <i>Airframe system component</i> removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is accurately completed and correctly processed 4.4. Removed components are tagged, sealed and

ELEMENT	PERFORMANCE CRITERIA
	packaged in accordance with specified procedures 4.5. Components to be installed are checked to confirm correct part numbers, serviceability and modification status 4.6. Mass balance of control surfaces to be installed is checked in accordance with the applicable maintenance manual, if required 4.7. Installation is carried out in accordance with the applicable maintenance manual 4.8. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of airframe systems and components, including airframe system component removal and installation
- recognising system and component defects/external damage, correct installation and security for the range of airframe systems listed in the Range Statement
- removing, installing and rigging of flight controls
- checking flight control mass balance
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to airframe system maintenance
- standard trade practices relating to tool and test/rigging equipment usage and

REQUIRED SKILLS AND KNOWLEDGE

- installation/securing of system components
- flight control system layout and operation
- theory of flight:
 - airflow
 - conditions of flight
 - lift and forces
 - drag
 - wings, tailplane and vertical stabiliser
 - lift augmentation (flaps, slats and slots)
 - aircraft control surfaces and their function (elevator, ailerons, rudder, elevons and trim tabs)
 - flight control balancing and flutter
 - stability and control and flight control rigging
- system layout and operation:
 - cockpit controls
 - cables and cable tensioning
 - pulleys and fairleads
 - bellcranks
 - levers
 - control surface horns
 - screwjacks
 - push/pull rods
- mechanical flight control system maintenance procedures and troubleshooting
- fixed undercarriage and shock absorber systems:
 - undercarriage configurations and types (tailwheel, tricycle and bicycle)
 - relative advantages of undercarriage configurations
 - steering systems
 - types of shock absorber (springs, leaf, coil, spring tube, rubber disc, bungee and oleo)
 - wheels and tyres
 - axles and wheel bearings
 - wheel spats
 - fixed undercarriage maintenance procedures and troubleshooting
- small aircraft brake systems:
 - types of brake system (mechanical and hydraulic)
 - master/slave cylinder hydraulic brake system operation
 - hydraulic fluids and seals
 - rigid and flexible plumbing

REQUIRED SKILLS AND KNOWLEDGE

- brake pads and shoes
- brake discs and drums/linings
- brake system maintenance procedures and troubleshooting
- cabin heater system layout and operation:
 - heat source (muff heaters)
 - ducting for heating and demisting
 - valves and linkages
 - fan
 - cabin heating system maintenance procedures and troubleshooting
- fuel system layout and operation:
 - fuel tank types and location
 - selector valves and linkages
 - drain valves
 - rigid and flexible plumbing
 - fuel filters
 - boost pumps
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot airframe systems and remove and install a range of airframe system components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with airframe systems and components of basic light

EVIDENCE GUIDE

	fixed wing aircraft. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing, troubleshooting and component removal and installation is essential. This may be demonstrated through application across a range of airframe systems and components as listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on groups listed in the Range Statement, as follows: • at least one of each system listed in Groups 1 to 5 • a representative range of components from each of Groups 6 to 12. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Maintenance documentation	Relevant maintenance documentation includes: • servicing schedules • maintenance manuals
Airframe systems	Airframe systems may include: 1. Flight control systems 2. Fixed undercarriage shock absorbers 3. Master/slave cylinder brake systems 4. Fuel systems 5. Cabin heating systems
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Airframe system components	Airframe system components may include: 6. Ailerons, elevators, rudders, trim tabs, flaps and slats 7. Flight control wheels or sticks, cables, pulleys, guides, fairleads, bellcranks, rods, torque tubes, chains, sprockets, trim wheels or handles and rudder pedals or bars 8. Fixed undercarriage hydraulic and rubber shock absorbers 9. Wheels and brake units 10. Brake master cylinders and rigid or flexible plumbing 11. Rigid or flexible fuel tanks,

RANGE STATEMENT	
	selector/shutoff valves and rigid or flexible plumbing 12. Cabin heater ducting and control valves
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA352A Maintain basic rotary wing aircraft systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain basic rotary wing aircraft rotors, rotor control systems, airframe systems and components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot, and replace components of rotor, rotor control systems and airframe systems of basic rotary wing aircraft. Applications include rotary wing aircraft that have mechanical control systems, either skids or floats and a normally aspirated engine.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect rotor and	1.1.Isolation and warning signs are fitted/installed to the

ELEMENT	PERFORMANCE CRITERIA
rotor control systems and components	system or related systems and the aircraft configured for safe system inspection and operation in accordance with relevant aircraft publications/maintenance regulations orders and standards and practices 1.2. Rotor and rotor control system is visually or physically checked/inspected for external signs of defects in accordance with relevant aircraft publications maintenance regulations/orders and standards and practices 1.3. Defects are identified and recorded in accordance with standard enterprise procedures
2. Inspect basic rotary wing airframe systems	2.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 2.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 2.3. Airframe system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 2.4. Defects are correctly identified and reported
3. Ground test rotor and rotor control systems	3.1. Aircraft and system prepared in accordance with relevant aircraft publications/maintenance regulations orders and standards and practices, for the operation of engine and rotor system 3.2. Rotor and rotor control system are functionally tested, in accordance with relevant aircraft publications maintenance regulations/orders and standards and practices, for evidence of malfunction 3.3. System calibration or adjustments are performed in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
4. Test/adjust basic rotary wing airframe systems and components	4.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 4.2. Airframe system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 4.3. System adjustment is performed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	maintenance manual
5. Troubleshoot rotor and rotor control systems	5.1.Available information from aircraft maintenance documentation, inspection and test results is used to assist in fault determination 5.2.Relevant aircraft publication fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting 5.3.Specialist advice is obtained to assist with the troubleshooting process 5.4.Rotor and rotor control system faults are located and the causes of the faults are clearly identified and recorded in aircraft maintenance documentation in accordance with standard enterprise procedures 5.5.Fault rectification requirements are determined
6. Troubleshoot basic rotary wing airframe systems	6.1.Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 6.2.Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 6.3.Specialist advice is obtained, where required, to assist with the troubleshooting process 6.4.Airframe system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 6.5.Rectification requirements are determined
7. Remove and install rotary wing rotor and rotor system components	7.1.System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices, and isolation and warning signs are installed/fitted to ensure personnel safety 7.2.Rotor and rotor system component removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 7.3.Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures 7.4.Removed components are labelled, sealed and packaged in accordance with relevant aircraft

ELEMENT	PERFORMANCE CRITERIA
	publications/maintenance regulations/orders and standards and practices 7.5. Rotor or rotor system component to be installed is checked to confirm correct part or model numbers, modification status and serviceability 7.6. Mass balance of rotor blades/head is checked in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 7.7. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 7.8. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage
8. Remove and install rotor control system components	8.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices, and isolation and warning signs are installed/fitted to ensure personnel safety 8.2. Rotary wing flight control system component removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 8.3. Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures 8.4. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 8.5. Rotary wing flight control system components to be installed are checked to confirm correct part or model numbers, modification status and serviceability 8.6. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices 8.7. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage 8.8. Required aircraft maintenance documentation is completed and processed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	standard enterprise procedures
9. Remove and install basic rotary wing airframe system components	9.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 9.2. Airframe system component removal is carried out in accordance with the applicable maintenance manual. 9.3. Required maintenance documentation is accurately completed and correctly processed 9.4. Removed components are tagged, sealed and packaged in accordance with specified procedures 9.5. Components to be installed are checked to confirm correct part numbers, serviceability and modification status 9.6. Mass balance of control surfaces to be installed is checked in accordance with the applicable maintenance manual, if required 9.7. Installation is carried out in accordance with the applicable maintenance manual 9.8. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of:
 - rotary wing mechanical control systems
 - helicopter airframe systems and components, including rotors and rotor system
- recognising system and component defects/external damage, correct installation and security for the range of airframe systems listed in the Range Statement
- removing, installing and rigging of rotor systems and rotor/flight controls
- removing and installing the range of airframe components listed in the Range

REQUIRED SKILLS AND KNOWLEDGE

Statement

- checking rotor mass balance
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to airframe system maintenance, including the lifting and handling of heavy components
- standard trade practices relating to tool and test/rigging equipment usage and installation/securing of system components
- theory of flight:
 - airflow
 - conditions of flight
 - lift and forces
 - drag
- rotary flight principles:
 - terminology relating to:
 - aerofoils
 - main rotor blades
 - rotor discs
 - rotors (main and tail)
 - aerodynamic characteristics:
 - aerofoil design
 - forces
 - rotor thrust and power requirements
 - vortex ring
 - autorotation
 - helicopter stability
- helicopter dynamic components:
 - main rotors:
 - blades
 - heads
 - linkages
 - tail rotors

REQUIRED SKILLS AND KNOWLEDGE

- swash plates
- transmissions and drive shafts
- helicopter structure and airframe systems:
 - structure and layout
 - engine and transmission
 - flight control system layout and operation
 - cabin heater system layout and operation
 - fuel system layout and operation
- helicopter maintenance procedures and troubleshooting
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures, including requirements for engine and rotor system operation

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot basic rotary wing aircraft rotor, rotor control and airframe systems and remove and install rotors, and a range of rotor control and airframe system components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with the, rotors, rotor control systems, airframe systems and components of basic rotary wing aircraft. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

EVIDENCE GUIDE

	Evidence of transferability of skills and knowledge related to inspection, testing, troubleshooting and component removal and installation is essential. This may be demonstrated through application across a range of rotors, rotor control systems, airframe systems and components as listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on groups listed in the Range Statement, as follows: • at least one component from each of Groups 1 to 7 • a representative range of components from Groups 8 and 9. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Rotor and rotor control system	Rotor and rotor control system components may include: 1. Main rotor blades and tail rotor blades 2. Rotor heads, swash plates and tail rotor pitch control assemblies 3. Mechanical flight control components (collective and cyclic pitch levers, rudder pedals, cables, pulleys, guides, fairleads, bellcranks, rods, torque tubes, chains and sprockets) 4. Main rotor, intermediate or tail rotor gearboxes 5. Drive shafts and couplings
Engine and rotor system operation	The operation of engine and rotor system: • must be performed by a qualified pilot
Airframe systems and components	Airframe systems may include: 6. Fuel systems 7. Cabin heating systems Airframe system components may include: 8. Rigid or flexible fuel tanks, selector/shutoff valves and rigid or flexible plumbing 9. Cabin heater ducting and control valves
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities

RANGE STATEMENT**Procedures and requirements**

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)**Unit sector****Competency field****Competency field**

Aviation maintenance

Co-requisite units**Co-requisite units**

MEA353A Maintain basic light aircraft engines and propellers

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain basic light fixed and rotary wing aircraft piston engines and fixed pitch propellers. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of piston engine and system theory to inspect, test and troubleshoot, remove and install normally aspirated piston engines and engine system components The unit also covers the inspection, maintenance, removal and installation of fixed pitch propellers. Applications include normally aspirated piston engines of basic light fixed wing aircraft and basic rotary wing aircraft, and fixed pitch propellers.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Inspect piston engine system and components/systems	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual 1.2. Piston engine and components/systems are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual
2. Test piston engine	2.1. Aircraft and engine are correctly prepared in accordance with applicable maintenance manual 2.2. Assistance is provided with engine and/or system operation during prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual
3. Troubleshoot piston engine	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Piston engine faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 3.5. Fault rectification requirements are determined to assist in planning the repair
4. Remove piston engine and engine system components	4.1. Aircraft is prepared and supported and rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during engine removal 4.2. Removal is carried out in accordance with the applicable maintenance manual 4.3. Engine is tagged and prepared for transport or storage in accordance with the specified procedures 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Install piston engine	5.1. Engine to be installed is checked to confirm correct

ELEMENT	PERFORMANCE CRITERIA
and engine system components	part or model numbers, modification status and serviceability 5.2. Installation is carried out in accordance with the applicable maintenance manual 5.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage 5.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
6. Inspect and maintain fixed pitch propeller	6.1. Engine is rendered safe for propeller inspection in accordance with maintenance manual or enterprise procedures 6.2. Fixed pitch propeller is inspected for security, damage and deterioration in accordance with the applicable maintenance manual 6.3. Metal propeller nicks and dents within damage limits are blended out in accordance with maintenance manual procedures
7. Remove fixed pitch propeller	7.1. Engine is rendered safe and the aircraft is prepared for propeller removal in accordance with maintenance manual or enterprise procedures 7.2. Propeller is removed in accordance with maintenance manual procedures 7.3. Removed propeller is tagged and prepared for transport or storage in accordance with specified procedures 7.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
8. Install fixed pitch propeller	8.1. Engine is rendered safe and the aircraft is prepared for propeller installation in accordance with maintenance manual or enterprise procedures 8.2. Propeller to be installed is checked to confirm correct part or number, modification status and serviceability 8.3. Installation is carried out in accordance with the applicable maintenance manual 8.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including the use of material safety data sheets (MSDS) and personal protective equipment
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in piston engines, components and system components visual/physical inspection
- assisting with testing of piston engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
- compiling engine condition monitoring records
- rigging and adjusting engine controls and systems
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in piston engines and engine systems, clearly record details and identify the required rectification actions
- correctly removing and installing piston engine, engine components and fixed pitch propellers, including spinners
- inspecting propellers for security, damage and deterioration
- blending out metal propeller nicks and dents that are within maintenance manual limits

Required knowledge

Look for evidence that confirms knowledge of:

- OHS procedures associated with engine and propeller maintenance, including lifting and handling of heavy objects
- how to obtain MSDS
- use of personal protective equipment
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures
- fault diagnosis techniques
- piston engine and engine system layout and operation:
 - four stroke engine theory of operation and performance
 - cylinder configurations
 - construction (components and materials)
 - carburettors and air induction systems

REQUIRED SKILLS AND KNOWLEDGE

- fuel injection systems
- fuels and their characteristics
- ignition systems
- lubricating systems and lubricants
- cooling systems
- exhaust systems
- accessory drives and mounts
- normally aspirated piston engine maintenance requirements and troubleshooting procedures
- system component operation including electrical and instrument system interfaces:
 - magnetos and ignition harnesses
 - spark plugs
 - fuel pumps
 - fuel filters
 - oil pumps
 - oil filters
 - oil tanks
 - vacuum pumps
 - generators
 - starter motors
 - oil pressure gauges (direct reading)
 - temperature gauges (direct reading)
 - tachometers
 - manifold pressure gauges
 - maintenance requirements and troubleshooting procedures
- removal and installation procedures for piston engines and engine components:
 - removal procedures and handling
 - control linkages
 - electrical wiring
 - engine instrument connections
 - installation and rigging
 - ground running
 - system component removal, installation and system testing
- propellers, materials and damage and deterioration criteria:
 - fixed pitch propeller types, terminology and theory:
 - tractor/pusher
 - matching to engine and aircraft
 - leading edge/trailing edge

REQUIRED SKILLS AND KNOWLEDGE

- blade stations
- forces acting on a propeller
- propeller balance
- materials and construction methods:
 - metal propeller metals, construction and surface protection
 - wooden propeller materials, construction and surface protection
 - composite propeller materials, construction and surface protection
 - damage and deterioration
- methods of blending out of minor damage to metal propellers
- propeller removal and installation procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to maintain fixed pitch propellers and to inspect, test, troubleshoot, remove and install piston engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with engines, engine systems and fixed pitch propellers. It is essential that system testing procedures take into account all safety precautions associated with piston engine system operation, and that awareness be demonstrated of dual inspection requirements associated with work on engine controls.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of engine systems or types and

EVIDENCE GUIDE

	propellers made from different materials. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures and functional rigging checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out rigging checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6 listed in the Range Statement (Group 6 may be omitted where not applicable to the enterprise), and on at least one type of fixed pitch propeller. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Piston engines and components/systems	Piston engines and components/systems may include: 1. Normally aspirated engine (all types), main components and accessories/drives 2. Control system 3. Starter system 4. Fuel, air systems 5. Exhaust system 6. Oil system (if dry sump)
Engine and/or system operation	Engine and/or system operation: • testing of engines fitted to helicopters (where auxiliary drive is not available) may be carried out through the applicant directing a pilot qualified on type
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Fixed pitch propellers	Fixed pitch propeller may include a spinner and the propeller may be made from: • metal • composite • wood
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA354A Maintain light aircraft pneumatic systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain light aircraft pneumatic systems and system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test, troubleshoot and replace components of light aircraft pneumatic systems. Applications include light aircraft that have pneumatic systems where the air source is other than gas turbine engine bleed air. Bleed-air supplied pneumatic systems are covered by units MEA303C Remove and install aircraft pneumatic system components and MEA310B Inspect, test and troubleshoot aircraft pneumatic systems and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Inspect light aircraft pneumatic systems	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. Components of pneumatic systems are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust light aircraft pneumatic systems and components	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 2.2. Pneumatic system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System adjustment is performed in accordance with maintenance manual
3. Troubleshoot light aircraft pneumatic systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Pneumatic system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install light aircraft pneumatic system components	4.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Pneumatic system component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is accurately completed and correctly processed 4.4. Removed components are tagged, sealed and

ELEMENT	PERFORMANCE CRITERIA
	packaged in accordance with specified procedures 4.5. Components to be installed are checked to confirm correct part numbers, serviceability and modification status 4.6. Installation is carried out in accordance with the applicable maintenance manual 4.7. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of light aircraft pneumatic systems and components, including pneumatic system component removal and installation
- recognising pneumatic system and component defects/external damage, correct installation and security for the types of systems listed in the Range Statement
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing of all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to light aircraft pneumatic system maintenance
- standard trade practices relating to tool and test equipment usage and installation/securing of system components
- types of light aircraft pneumatic system and components thereof:
 - vacuum
 - positive pressure
 - high pressure

REQUIRED SKILLS AND KNOWLEDGE

- pneumatic system layout, operation and characteristics and system component operation and construction (including electrical and instrument system interfaces)
- how to configure the aircraft for inspection, testing and troubleshooting of pneumatic systems and components
- pneumatic system maintenance requirements and troubleshooting
- component attachment methods
- connection hardware and couplings
- electrical circuit isolation and plug removal and installation
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot light aircraft pneumatic systems and remove and install a range of pneumatic system components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with light aircraft pneumatic systems and components. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection, testing, troubleshooting and component removal and installation is essential. This may be demonstrated through application across pneumatic systems and components as listed in the

EVIDENCE GUIDE	
	Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on a system as listed in Group 1 and on a representative range of components as listed in Groups 2 to 5 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Pneumatic systems	Pneumatic systems may include: 1. De-icing systems including de-icer boots on wings and tailplanes
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Pneumatic system components	Pneumatic system components may include: 2. Filters, valves, pumps, regulators and timers 3. Gauges (direct reading) 4. De-icer boots 5. Rigid and flexible pipelines, hoses and fittings
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA355A Maintain light aircraft air cycle air conditioning systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain light aircraft air cycle air conditioning systems and system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test, troubleshoot and replace components of light aircraft air cycle air conditioning systems. Applications include unpressurised gas turbine engine-powered fixed and rotary wing light aircraft that have air cycle air conditioning systems. Where the aircraft has a pressurisation system the air conditioning and pressurisation systems are covered by MEA303C Remove and install aircraft pneumatic system components and MEA310B Inspect, test and troubleshoot aircraft pneumatic systems and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect light aircraft air cycle air conditioning system	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual 1.3. <i>Air cycle air conditioning system components</i> are visually or physically checked for external signs of defects in accordance with applicable maintenance

ELEMENT	PERFORMANCE CRITERIA
	manual 1.4. Defects are correctly identified and reported
2. Test/adjust light aircraft air conditioning systems and components	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 2.2. Air cycle air conditioning system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System adjustment is performed in accordance with maintenance manual
3. Troubleshoot light aircraft air cycle air conditioning systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Air cycle air conditioning system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install light aircraft air cycle air conditioning system components	4.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Air cycle air conditioning system component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is accurately completed and correctly processed 4.4. Removed components are tagged, sealed and packaged in accordance with specified procedures 4.5. Components to be installed are checked to confirm correct part numbers, serviceability and modification status 4.6. Installation is carried out in accordance with the applicable maintenance manual 4.7. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of light aircraft air cycle air conditioning systems and components, including system component removal and installation
- recognising air cycle air conditioning system and component defects/external damage, correct installation and security for the types of system components listed in the Range Statement
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to light aircraft air cycle air conditioning system maintenance
- standard trade practices relating to tool and test equipment usage and installation/securing of system components
- air cycle air conditioning system:
 - terminology
 - layout
 - operation including component operation and construction
 - electrical temperature control system components
- how to configure the aircraft for inspection, testing and troubleshooting of air cycle air conditioning systems and components
- air cycle air conditioning maintenance requirements and troubleshooting
- component attachment methods
- connection hardware and couplings
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures
- maintenance requirements and troubleshooting procedures

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot light aircraft air cycle air conditioning systems and remove and install a range of pneumatic system components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with light aircraft air cycle air conditioning systems and components. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing, troubleshooting and component removal and installation is essential. This may be demonstrated through application across air cycle air conditioning systems and components as listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on an air cycle air conditioning system and on a

EVIDENCE GUIDE	
	representative range of components as listed in Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Air cycle air conditioning system components	Air cycle air conditioning system components may include: 1. Valves and regulators 2. Heat exchangers, water separators and humidifiers 3. Expansion turbines 4. Rigid and flexible pipelines, hoses and fittings

RANGE STATEMENT	
	5. Ducting 6. Temperature sensors, temperature controllers, and electrical control circuit wiring/components
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA356A Maintain light piston engine aircraft pressurisation systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain light piston engine aircraft pressurisation systems and system components. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test, troubleshoot and replace components of light piston engine aircraft pressurisation systems. Applications include all types of light fixed wing piston engine aircraft that have cabin pressurisation systems. Where aircraft types have pressurisation and air cycle air conditioning systems the applicable units are MEA208B Remove and install aircraft pressurisation control system components, MEA219B Inspect, test and troubleshoot aircraft pressurisation control systems and components, MEA303C Remove and install aircraft pneumatic system components and MEA310B Inspect, test and troubleshoot aircraft pneumatic systems and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware and components
	MEA246C	Fabricate and/or repair aircraft electrical hardware or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect light piston engine aircraft pressurisation system	1.1. Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements 1.2. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual

ELEMENT	PERFORMANCE CRITERIA
	1.3. Pressurisation system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual 1.4. Defects are correctly identified and reported
2. Test/adjust light piston engine aircraft pressurisation systems and components	2.1. Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation 2.2. Pressurisation system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction 2.3. System adjustment is performed in accordance with maintenance manual
3. Troubleshoot light piston engine aircraft pressurisation systems	3.1. Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Pressurisation system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures 3.5. Rectification requirements are determined
4. Remove and install light piston engine aircraft pressurisation system components	4.1. System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety 4.2. Pressurisation system component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is accurately completed and correctly processed 4.4. Removed components are tagged, sealed and packaged in accordance with specified procedures 4.5. Components to be installed are checked to confirm correct part numbers, serviceability and modification status 4.6. Installation is carried out in accordance with the applicable maintenance manual 4.7. Required maintenance documentation is completed

ELEMENT	PERFORMANCE CRITERIA
	and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of light piston engine aircraft pressurisation systems and components, including system component removal and installation
- recognising pressurisation system and component defects/external damage, correct installation and security for the types of system components listed in the Range Statement
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing all relevant occupational health and safety (OHS) procedures

Required knowledge

Look for evidence that confirms knowledge of:

- OHS precautions relevant to light piston engine aircraft pressurisation system maintenance
- physiological aspects relating to high altitude flight:
 - human oxygen requirements and hypoxia
 - human temperature requirements and hypothermia
- standard trade practices relating to tool and test equipment usage and installation/securing of system components
- sources of pressurised air (cabin supercharger, air pump or engine turbocharger)
- the relationship between cabin altitude and pressure differential and related structural limitations
- pressurisation system:
 - layout
 - operation and characteristics

REQUIRED SKILLS AND KNOWLEDGE

- system component operation and construction:
 - outflow valves
 - pressure controllers
 - safety valves
 - negative pressure relief valves
 - dump valves
 - ducting and outlets
- electrical and instrument interfaces, including warning and cabin pressure indication systems
- interface with heating and air conditioning systems
- how to configure the aircraft for inspection, testing and troubleshooting of pressurisation systems and components
- pressurisation system maintenance requirements and troubleshooting
- component attachment methods
- connection hardware and couplings
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures
- maintenance requirements and troubleshooting procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot light piston engine aircraft pressurisation systems and remove and install a range of pressurisation system components that is representative of the scope of the listed variables in accordance with relevant maintenance manual instructions while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with light piston engine aircraft pressurisation systems

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	and components. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection, testing, troubleshooting and component removal and installation is essential. This may be demonstrated through application across pressurisation systems and components as listed in the Range Statement. The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this unit of competency are being achieved under routine supervision on a pressurisation system and on a representative range of components as listed in Groups 1 to 5 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Pressurisation system components	Pressurisation system components may include: 1. Pressure controllers 2. Outflow valves 3. Safety valves 4. Negative pressure relief valves 5. Ducting
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA357A Inspect, test and repair aircraft fabric surfaces

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, test and repair aircraft fabric surfaces. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, knowledge of fabric covering systems and maintenance publications to inspect, test and repair aircraft fabric surfaces. Applications include aircraft and aircraft components that are covered with fabric.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect/test aircraft fabric surfaces	1.1. Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify specific <i>inspection/testing</i> requirements 1.2. Appropriate preparation and access to the aircraft

ELEMENT	PERFORMANCE CRITERIA
	structure is undertaken to allow for proper inspection in accordance with maintenance documentation 1.3. Aircraft fabric-covered surfaces are inspected/tested for signs of damage, deterioration or loss of tensile strength in accordance with maintenance documentation and approved procedures 1.4. Damage or deterioration is assessed against limits specified by maintenance manual or other approved data to determine if repair, restoration or replacement is required
2. Repair aircraft fabric surfaces	2.1. Extent of damage is correctly assessed to assist in determining repair procedure 2.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personal safety and freedom from damage 2.3. Appropriate repair scheme is identified in accordance with maintenance manual and/or approved data 2.4. All materials and equipment required are organised 2.5. Fabric repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out 2.6. Work area is cleaned of all waste material or contaminants 2.7. Components are adjusted and/or re-balanced, where necessary, to operate within prescribed specifications 2.8. Required maintenance/repair documentation is completed and processed in accordance with standard enterprise procedures 2.9. Where required repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including the selection and use of personal protective equipment and material safety data sheets (MSDS)
- using approved maintenance documentation and aircraft publications relating to aircraft fabric surfaces
- testing the soundness of fabric surfaces
- recognising and assessing fabric surface damage and deterioration
- recognising defective doping
- identifying and applying applicable repair and surface rejuvenation schemes

Required knowledge

Look for evidence that confirms knowledge of:

- OHS hazards associated with fabric covering processes and how to obtain relevant MSDS and use personal protective equipment
- regulatory requirements relating to the repair of fabric surfaces
- industry publications relating to the repair of fabric surfaces
- aircraft fabric surface covering and finishing materials and principles
- fabric-covered component attachment methods
- types of fabric and related characteristics
- types of tape, cord and thread and their relative advantages and disadvantages
- cements and finishing scheme materials, their characteristics, uses, storage requirements and related safety precautions
- inspection and testing requirements for existing fabric coverings and new fabric prior to use
- the criteria for fabric rejuvenation, repairs and repair methods, including the need for re-balancing of flight control surfaces after fabric rejuvenation or repair
- the application of flight loads to fabric-covered surfaces, and related failure mechanisms

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, knowledge of fabric surfaces

EVIDENCE GUIDE	
	and maintenance publications to inspect, test and repair aircraft fabric surfaces.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection and testing applications associated with maintenance of aircraft fabric surfaces. It is essential that the procedures take into account all aircraft and personal safety precautions, especially with regard to the use of finishing scheme materials. Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft fabric surfaces is essential. This may be demonstrated through application across a range of aircraft fabric surfaces. Ability to interpret inspection, testing and repair procedures and specifications (allowable limits) and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on all items in each of Groups 1 to 9, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Inspection and testing	Inspection/testing for: 1. Blockage of drainage and water and dirt collection points 2. Deterioration of finishing scheme 3. Deterioration of fabric tensile strength 4. Damage to inspection panels and zips
Repair	Repair of fabric surface: 5. By surface rejuvenation 6. By stitching 7. By unsewed doped-on repair 8. Correct application of finishing scheme 9. Recognition of requirement to re-balance fabric-covered control surfaces after rejuvenation or repair of fabric covering
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA358A Re-cover aircraft fabric surfaces

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to re-cover aircraft fabric surfaces. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, knowledge of fabric surfaces and maintenance publications to re-cover aircraft fabric surfaces. Applications include aircraft and aircraft components that are covered with fabric

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Re-cover aircraft fabric surfaces	1.1. Required covering materials and methods are determined from maintenance manual and/or approved data 1.2. Required finishing scheme is determined from maintenance manual and/or approved data 1.3. Materials and equipment required are organised 1.4. Necessary structure and system inspection and preparation prior to covering is correctly performed 1.5. Fabric covering is correctly fabricated and attached to the structure 1.6. Drainage holes are correctly created 1.7. Applicable finishing scheme is correctly applied 1.8. Components are adjusted and/or re-balanced, where necessary, to operate within prescribed specifications 1.9. Required maintenance/repair documentation is completed and processed in accordance with standard enterprise procedures 1.10. Where required repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS procedures, including the correct selection and use of personal protective equipment and material safety data sheets (MSDS)
- using approved maintenance documentation and aircraft publications relating to aircraft fabric surfaces
- inspecting structural members, wiring, grommets and system components and initiation of any necessary repair or rectification action
- fabricating and fitting fabric covering with appropriately placed inspection panels, zips and drainage holes
- applying fabric finishing scheme ready for paint
- recognising defective doping

Required knowledge

Look for evidence that confirms knowledge of:

- OHS hazards and how to obtain and use relevant MSDS and personal protective equipment
- regulatory requirements and industry publications relating to fabric covering of aircraft surfaces
- aircraft fabric surface covering and finishing materials and principles
- fabric-covered component attachment methods
- types of fabric and related characteristics
- types of tape, cord and thread and their relative advantages and disadvantages
- cements and finishing scheme materials, their characteristics, uses, storage requirements and related safety precautions
- fabric sewing techniques
- application techniques for cements and finishing schemes
- inspection and testing requirements for new fabric prior to use
- the need for re-balancing of flight control surfaces after re-covering, finishing scheme application and painting
- aircraft structure and system inspection requirements prior to re-covering with fabric
- the application of flight loads to fabric-covered surfaces, and related failure mechanisms

REQUIRED SKILLS AND KNOWLEDGE

- the methods and procedures used (including doping and finishing) in re-covering components, such as wings, fuselages and control surfaces
- the requirements for the placement of inspection panels and zips, and for the creation of drainage holes

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, knowledge of fabric surfaces and maintenance publications to re-cover aircraft fabric surfaces.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range re-covering applications associated with aircraft fabric surfaces. It is essential that the procedures take into account all aircraft and personal safety precautions, especially with regard to the use of finishing scheme materials.

Evidence of transferability of skills and knowledge related to re-covering of aircraft fabric surfaces is essential. This may be demonstrated through application across a range of aircraft fabric surfaces. Ability to interpret re-covering procedures and specifications and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of fabric surface re-covering tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work environment or simulated work environment using tools and

EVIDENCE GUIDE	
assessment	equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Scope	This unit of competency applies to the re-covering of a fabric-covered surfaces and the correct application of the approved finishing scheme
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA357A	Inspect, test and repair aircraft fabric surfaces

MEA359A Inspect and repair aircraft wooden structures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect and repair aircraft wooden structures. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of woodworking hand skills and knowledge and the use of maintenance publications to inspect and repair aircraft wooden structure. Applications include all aircraft with wooden structure and wooden components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft wooden structure	1.1.Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify specific inspection requirements 1.2.Appropriate preparation and access to the aircraft

ELEMENT	PERFORMANCE CRITERIA
	structure is undertaken to allow for proper inspection and testing in accordance with maintenance documentation 1.3. Aircraft wooden structure is visually or physically checked for signs of deterioration, deformation defects or damage in accordance with maintenance documentation and approved procedures 1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required
2. Repair aircraft wooden structure	2.1. Extent of deterioration or damage is correctly assessed to assist in determining repair procedure 2.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personal safety and freedom from damage 2.3. Appropriate repair scheme is identified in accordance with structural repair manual and/or approved data 2.4. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage is beyond limits 2.5. All materials and equipment required are organised 2.6. Structural repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out 2.7. Finishing scheme is restored 2.8. Work area is cleaned of all waste material or contaminants 2.9. Components are adjusted, where necessary, to operate within prescribed specifications 2.10. Required maintenance/repair documentation is completed and processed in accordance with standard enterprise procedures 2.11. Where required, repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including the correct selection and use of personal protective equipment and material safety data sheets (MSDS)
- using approved maintenance documentation and aircraft publications relating to aircraft wooden structure
- identifying and using woodworking tools
- identifying aircraft structural timbers and their characteristics
- identifying potential causes of deterioration in wooden structural components
- identifying wooden structure defects and damage
- identifying the condition of glue lines
- fabricating and fitting repair members
- gluing of wooden structure
- restoring surface finish after repair

Required knowledge

Look for evidence that confirms knowledge of:

- OHS hazards relating to wooden structure repair materials and how to obtain relevant MSDS and personal protective equipment
- aircraft wooden construction principles and inspection techniques
- wooden structural component attachment methods
- the effects of environmental factors on aircraft wooden structures
- wooden structure glues and application methods
- wooden component assembly methods and testing of joints
- wooden structure finishing schemes for exterior and interior surfaces
- the application of flight loads to aircraft wooden structural components and joints, and related failure mechanisms
- wooden component fabrication and repair techniques

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the

EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply woodworking hand skills and use applicable tools and maintenance publications to inspect and repair aircraft wooden structure while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and repair applications associated with maintenance of aircraft wooden structures. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure. Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft wooden structures is essential. This may be demonstrated through application across a range of aircraft wooden structures. Ability to interpret inspection and repair procedures and specifications (allowable limits) and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on all items in each of Groups 1 to 10 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Inspection and testing	Inspection and/or testing of: 1. Drainage and water and dirt collection points 2. Fabric covered plywood surfaces 3. Single and double plywood skin 4. Structural timbers and bolt holes 5. Glued joint strength 6. Glue lines Inspection techniques may include visual inspection, physical checks, mensuration and alignment
Repair	Repair of: 7. Load carrying structural timbers 8. Plywood skin 9. Spars and ribs.
Finishing scheme	10. Refinishing of structure after repair using approved finishing scheme
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA360A Maintain aircraft diesel engines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain installed aircraft diesel engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of diesel engine and system theory to inspect, test and troubleshoot, remove and install aircraft diesel engines and engine system components. Applications include diesel engines fitted to light aircraft and driving fixed pitch propellers. Where the engine is driving a constant speed propeller, MEA307B Remove and install propeller systems and components and MEA315B Inspect, test and troubleshoot propeller systems and components, will also be required. Full authority digital engine control (FADEC) systems are covered by MEA279A Inspect, test and troubleshoot full authority digital engine control systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect diesel engine and components/systems	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual 1.2. <i>Diesel engine and components/systems</i> are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual
2. Test diesel engine	2.1. Aircraft and engine are correctly prepared in accordance with applicable maintenance manual 2.2. Built-in system test functions and status displays are activated, where applicable, outputs recorded and interpreted 2.3. Assistance is provided with engine and/or system

ELEMENT	PERFORMANCE CRITERIA
	operation during prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual
3. Troubleshoot diesel engine	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Diesel engine faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 3.5. Fault rectification requirements are determined to assist in planning the repair
4. Remove diesel engine and engine system components	4.1. Aircraft is prepared and supported and rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during engine removal 4.2. Removal is carried out in accordance with the applicable maintenance manual 4.3. Engine is tagged and prepared for transport or storage in accordance with the specified procedures 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Install diesel engine and engine system components	5.1. Engine to be installed is checked to confirm correct part or model numbers, modification status and serviceability 5.2. Installation is carried out in accordance with the applicable maintenance manual 5.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage 5.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in aircraft diesel engines, components and system components through visual/physical inspection
- assisting with testing of diesel engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
- compiling engine condition monitoring records
- rigging and adjusting engine controls and systems other than FADEC systems
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in diesel engines and engine systems, clearly record details and identify the required rectification actions.
- correctly removing and installing diesel engines and engine components

Required knowledge

Look for evidence that confirms knowledge of:

- OHS procedures associated with engine and propeller maintenance, including lifting and handling of heavy objects
- fault diagnosis techniques
- two and four stroke diesel aircraft engines and engine system layout and operation:
 - principles of operation of two and four stroke diesel engines
 - component function, construction and materials
 - engine operation
 - engine power, efficiency and performance
- diesel aircraft engine super/turbo charging systems
- diesel aircraft engine fuels and lubricating oils
- diesel fuel injection systems
- interfaces between engine systems and FADEC
- diesel aircraft engine induction systems
- diesel aircraft engine cooling systems (liquid and air)
- diesel aircraft engine exhaust systems
- system component operation, including electrical and instrument system interfaces
- dry sump lubrication systems

REQUIRED SKILLS AND KNOWLEDGE

- removal and installation procedures for diesel aircraft engines and engine components
- diesel aircraft engine maintenance requirements and troubleshooting
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect, test, troubleshoot, remove and install aircraft diesel engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with diesel aircraft engines and engine systems. It is essential that system testing procedures take into account all safety precautions associated with diesel engine system operation (including interfaces with FADEC systems) and that awareness be demonstrated of dual inspection requirements associated with work on engine controls.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of engine systems or types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures and functional checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with

EVIDENCE GUIDE	
	other systems will be necessary to supplement evidence of ability to carry out engine control system checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 8 listed in the Range Statement (Group 8 may be omitted where not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment

RANGE STATEMENT	
	requirements included in the Evidence Guide
Diesel engines and components/systems	Diesel engines and components/systems may include: 1. Two and four stroke diesel aircraft engines, main components and accessories/drives 2. Super/turbo charging systems 3. Control system/FADEC interface 4. Starter system 5. Fuel and air systems 6. Cooling system (liquid or air as applicable to enterprise) 7. Exhaust system 8. Oil system (if dry sump)
Engine testing	Testing of engines fitted to helicopters (where auxiliary drive is not available) may be carried out through the individual directing a pilot qualified on type
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team -related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA353A	Maintain basic light aircraft engines and propellers

MEA361A Maintain aircraft two stroke petrol engines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain installed aircraft two stroke petrol engines. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of two stroke petrol engine and system theory to inspect, test and troubleshoot, remove and install aircraft two stroke petrol engines and engine system components. Applications include aircraft two stroke petrol engines driving fixed pitch propellers. Where the engine is driving a constant speed propeller, MEA307B Remove and install propeller systems and components and MEA315B Inspect, test and troubleshoot propeller systems and components, will also be required.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect two stroke petrol engine and components/systems	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual 1.2. <i>Two stroke petrol engine and components/systems</i> are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual
2. Test two stroke petrol engines	2.1. Aircraft and engine are correctly prepared in accordance with applicable maintenance manual 2.2. Assistance is provided with engine and/or system operation during prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual

ELEMENT	PERFORMANCE CRITERIA
3. Troubleshoot two stroke petrol engines	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Two stroke petrol engine faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 3.5. Fault rectification requirements are determined to assist in planning the repair
4. Remove two stroke petrol engine and engine system components	4.1. Aircraft is prepared and supported and rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during engine removal 4.2. Removal is carried out in accordance with the applicable maintenance manual 4.3. Engine is tagged and prepared for transport or storage in accordance with the specified procedures 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Install two stroke petrol engine and engine system components	5.1. Engine to be installed is checked to confirm correct part or model numbers, modification status and serviceability 5.2. Installation is carried out in accordance with the applicable maintenance manual 5.3. Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage 5.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in two stroke petrol aircraft engines, components and system components through visual/physical inspection
- assisting with testing of two stroke petrol engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
- compiling engine condition monitoring records
- rigging and adjusting engine controls and systems
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in two stroke petrol engines and engine systems, clearly record details and identify the required rectification actions
- correctly removing and installing two stroke petrol engine and engine components

Required knowledge

Look for evidence that confirms knowledge of:

- OHS procedures associated with engine maintenance, including lifting and handling of heavy objects
- fault diagnosis techniques
- two stroke petrol aircraft engine layout and operation:
 - principles of operation of two stroke engines
 - component function, construction and materials
 - engine operation
 - engine power, efficiency and performance
- two stroke aircraft engine fuels, oils and fuel/oil mixing
- components, layout and operation of two stroke petrol aircraft engine:
 - fuel systems
 - ignition systems:
 - magneto
 - coil
 - spark plugs
 - ignition harnesses
 - switches

REQUIRED SKILLS AND KNOWLEDGE

- starting systems
- induction systems
- cooling systems (liquid and air)
- exhaust systems
- electrical and instrument system interfaces:
 - battery charging system
 - tachometer
- removal and installation procedures for two stroke petrol aircraft engines and engine components
- petrol two stroke aircraft engine maintenance requirements and troubleshooting
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect, test, troubleshoot, remove and install aircraft two stroke petrol engines and engine system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with two stroke petrol aircraft engines and engine. It is essential that system testing procedures take into account all safety precautions associated with two stroke petrol engine system operation and that awareness be demonstrated of dual inspection requirements associated with work on engine controls.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application

EVIDENCE GUIDE	
	across a number of engine systems or types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures and functional checks should also indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out engine control system checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 7 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Two stroke engines and components/systems	Two stroke petrol engines and components/systems may include: 1. Two stroke petrol aircraft engines, main components, including reduction gearboxes and accessories/drives 2. Ignition system 3. Control system 4. Starter system 5. Fuel, air systems 6. Cooling system (liquid or air as applicable to enterprise) 7. Exhaust system
Testing of engines	Testing of engines fitted to helicopters (where auxiliary drive is not available) may be carried out through the applicant directing a pilot qualified on type
Troubleshooting	Troubleshooting involves the use of test sets, downloaded maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA353A	Maintain basic light aircraft engines and propellers

MEA362A Maintain aircraft vapour cycle air conditioning systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain aircraft vapour cycle air conditioning systems. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of maintenance publications and knowledge of vapour cycle air conditioning systems to inspect, test and troubleshoot systems, and to remove and install mechanical and electrical system components. Compliance with applicable regulations is required where refrigerant evacuation and recharging is performed. Applications include all aircraft vapour cycle air conditioning systems and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect vapour cycle air conditioning systems	1.1. Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with applicable maintenance manual 1.2. <i>Vapour cycle air conditioning systems</i> are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual
2. Test vapour cycle air conditioning systems	2.1. Aircraft and system are correctly prepared in accordance with applicable maintenance manual 2.2. Vapour cycle air conditioning system is tested in

ELEMENT	PERFORMANCE CRITERIA
	accordance with prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual
3. Troubleshoot vapour cycle air conditioning systems	3.1. Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination 3.2. Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting 3.3. Specialist advice is obtained, where required, to assist with the troubleshooting process 3.4. Vapour cycle air conditioning system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required 3.5. Fault rectification requirements are determined to assist in planning the repair
4. Remove vapour cycle air conditioning system components	4.1. Aircraft and vapour cycle air conditioning system is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during component removal 4.2. Where refrigerant evacuation is necessary, evacuation is performed in accordance with regulatory requirements and maintenance manual procedures 4.3. Component removal is carried out in accordance with the applicable maintenance manual 4.4. Component is tagged and prepared for transport or storage in accordance with the specified procedures 4.5. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Install vapour cycle air conditioning system components	5.1. Component to be installed is checked to confirm correct part or model numbers, modification status and serviceability 5.2. Installation is carried out in accordance with the applicable maintenance manual 5.3. Vapour cycle air conditioning system is recharged with refrigerant, where necessary, in accordance

ELEMENT	PERFORMANCE CRITERIA
	with maintenance manual procedures and regulatory requirements 5.4. Vapour cycle air conditioning system is tested for correct function and freedom from refrigerant leaks if system recharging has been performed 5.5. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including the selection and use of applicable personal protective equipment and material safety data sheets (MSDS)
- complying with regulatory requirements regarding the de-gassing of vapour cycle air conditioning systems
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in vapour cycle air conditioning systems and system components through visual/physical inspection
- testing of vapour cycle air conditioning system operation, be able to operate systems and leak testing equipment, monitor indications and recognise correct function
- using specialist equipment to evacuate and recharge refrigerant
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in vapour cycle air conditioning systems, clearly recording details and identifying the required rectification actions
- correctly removing and installing vapour cycle air conditioning system electrical and mechanical components

Required knowledge

Look for evidence that confirms knowledge of:

- OHS procedures associated with vapour cycle air conditioning system maintenance, including the selection and use of personal protective equipment
- how to obtain applicable MSDS

REQUIRED SKILLS AND KNOWLEDGE

- regulations applying to the evacuation and recharging of refrigerant
- fault diagnosis techniques
- vapour cycle air conditioning system layout and operation
- vapour cycle air conditioning system electrical and mechanical component operation:
 - compressor
 - condenser
 - receiver dryer
 - thermal expansion valve
 - evaporator
 - magnetic clutch and drive system:
 - belt
 - power takeoff
 - electric motor
 - hydraulic motor
 - pneumatic
 - condenser extension and retraction system
 - blower
 - throttle system shutoff
 - temperature control system
- refrigerant used in aircraft vapour cycle air conditioning systems
- lubricants used in compressors
- equipment used to test systems and evacuate and recharge refrigerant
- procedures for evacuating and recharging system refrigerant
- refrigerant leak testing techniques and equipment
- removal and installation procedures for vapour cycle air conditioning system components
- vapour cycle air conditioning system maintenance requirements
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE**Overview of assessment**

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and engine and system theory knowledge to inspect, test and troubleshoot vapour cycle air conditioning systems and to remove and install system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with vapour cycle air conditioning systems and components. It is essential that system testing procedures take into account all safety precautions associated with vapour cycle air conditioning system operation and testing, and that regulations relating to the evacuation and recharging of refrigerant be strictly observed.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This may be demonstrated through application across a number of aircraft vapour cycle air conditioning systems. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures and functional checks should also indicate knowledge of system operation and regulations relating to refrigerant. Vapour cycle air conditioning system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out engine control system checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a system and a representative range of components in Groups 1 to 6 as listed in the Range Statement. This shall be established via the records in the Log of Industrial

EVIDENCE GUIDE	
	Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Vapour cycle air conditioning systems	Vapour cycle air conditioning systems may include: 1. Refrigeration system compressor, condenser, receiver dryer, thermal expansion valve and evaporator 2. Magnetic clutch and drive system (belt, power takeoff, electric motor, hydraulic motor or pneumatic as applicable) 3. Condenser extension and retraction system 4. Blower 5. Throttle system shutoff

RANGE STATEMENT	
	6. Temperature control system
Troubleshooting	Troubleshooting involves the use of test sets, maintenance data and fault-finding charts or similar, to line replacement level
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA363A Inspect, repair and maintain structures and related components of non-pressurised small aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to inspect, repair and maintain small aircraft structure and the removal and installation of related non-structural components such as internal trim, seats and emergency equipment. The competency elements and performance criteria also cover a significant portion of those required for units MEA304C Remove and install non-pressurised aircraft structural and non-structural components, MEA311C Inspect and repair/modify aircraft structures and MEA339B Inspect, repair and maintain aircraft structures. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of procedures and techniques associated with the inspection and maintenance of aircraft structures, and with the performance of a limited range of metal and composite repairs. Also required is an application of procedures and techniques associated with the removal and installation of related structural and non-structural components. Applications include the performance of structural maintenance activities and component removal and installation on non-pressurised fixed or rotary wing aircraft on the flight line or in the hangar.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft structure	1.1. Relevant maintenance documentation is used to identify specific inspection requirements 1.2. Appropriate preparation and access to the aircraft structure is undertaken to allow for proper inspection in accordance with maintenance documentation 1.3. Aircraft structure is visually or physically checked for signs of deformation defects or damage in accordance with maintenance documentation and approved procedures 1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required 1.5. Maintenance documentation is completed and processed in accordance with standard enterprise procedures
2. Prepare to undertake repair	2.1. Extent of damage is correctly assessed to assist in determining repair procedure 2.2. Appropriate repair scheme is identified in accordance with structural repair manual and/or approved data 2.3. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage is out of limits 2.4. All materials and equipment required are organised
3. Repair and maintain aircraft structure	3.1. Structural repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out 3.2. Preventative maintenance techniques are employed to preserve the integrity of aircraft structure 3.3. Work area is cleaned of all waste material or contaminants 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
4. Remove components	4.1. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage to aircraft or component during component removal

ELEMENT	PERFORMANCE CRITERIA
	4.2. Component removal is carried out in accordance with the applicable maintenance manual 4.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures 4.4. Where applicable, removed components are tagged and prepared for transport in accordance with specified procedures
5. Install components	5.1. Structural and/or non-structural components to be installed are checked to confirm correct part numbers, serviceability and modification status 5.2. Component installation is carried out in accordance with the applicable maintenance manual 5.3. Support/safety equipment is removed at an appropriate time to ensure personnel safety and freedom from structural damage 5.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying all relevant occupational health and safety (OHS) procedures, including the selection and use of material safety data sheets (MSDS) and applicable items of personal protective equipment
- demonstrating appropriate cleaning procedures to enable structure inspection
- demonstrating correct inspection procedures in accordance with aircraft and procedures manuals
- identifying damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of impact, fatigue or the various types of corrosion
- inspecting damage and assessing composite components/structures
- identifying various aircraft metals and their basic properties
- identifying composite materials used in aircraft construction, associated safety precautions and hazards

REQUIRED SKILLS AND KNOWLEDGE

- correctly interpreting repair scheme drawings (including third angle projection, isometric, sectional formats and hand sketches)
- using appropriate hand tools and machines, including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins)
- applying correct removal, installation and repair techniques for:
 - a range of rivets (blind and solid) using hand, squeeze and pneumatic situations
 - a range of close tolerance fasteners (standard and oversize - hillocks and taper locks), including hole preparation
 - threaded devices, including internal and external thread cutting, Helicoil inserts and damaged stud replacement
 - hardware assembled by close tolerance fits using heat, cooling and force methods, including bearings, bushes and inserts
- performing a range of metal structure and composite material repair techniques including:
 - metal scab patch, flush, splice, lap and formed section repair
 - composite external patch, scarf and stepped repairs
 - metal to metal and metal to composite bonding
- applying structural corrosion removal/treatment techniques
- restoring aircraft structure sealing and surface finishes
- using relevant maintenance documentation and aircraft manuals to:
 - remove and install structural and non-structural components
 - remove and install aircraft interior fittings
 - remove and install doors, door seals, windows and transparent panels
 - checking and adjusting all doors and access panels including locking mechanisms
- removing and installing emergency equipment

Required knowledge

Look for evidence that confirms knowledge of:

- applicable OHS procedures, including the use of personal protective equipment and MSDS
- construction methods and materials used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels
- definition of structural terms, i.e. failsafe, stress, strain, shear and cycles
- potential causes of structural failure
- non-destructive inspection methods and application of the various techniques

REQUIRED SKILLS AND KNOWLEDGE

- construction methods of, and assessing common defects in, aircraft plastic transparencies
- basic constructional features of, and assessing common defects in, glass windscreens
- the various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft
- the terms associated with composite materials and types of composite materials
- requirements for handling and storing aircraft metals and composite materials, including sealing agents, to industry standards
- means of identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour
- structural and non-structural component methods of attachment, faying surface treatment and fuel tank sealing
- non-pressurised fuselage aircraft doors, related seals and window and transparent panel attachment methods and sealing
- aircraft interior fittings (trim, linings, seats and floor panels) construction and attachment methods
- the location and attachment or stowage methods for emergency equipment
- assessment of structural damage:
 - types and classes of mechanical damage
 - types of corrosion and determining the extent of damage
 - relevant documentation and manuals
 - damage limits and repair schemes for metallic and non-metallic structure
- procedures for the fabrication and fitment of metal repairs:
 - scab patch
 - flush patch
 - splice
 - lap
 - formed section
- corrosion removal and passivation
- procedures for performing composite repairs:
 - external patch
 - scarf patch
 - stepped repairs
- repair of integral fuel tanks and sealing of faying surfaces, including specific OHS and personal protective equipment requirements
- surface finishes and methods of restoration, including specific OHS and personal protective equipment requirements
- how to obtain MSDS
- relevant maintenance and structural repair manuals
- relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect and maintain aircraft structure, perform a range of metal and composite structural repair tasks and remove and install structural and non-structural components that are representative of the scope of the listed variables in accordance with relevant maintenance documentation while applying all relevant OHS procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and repair applications associated with aircraft maintenance. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure.

Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft structure is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. Ability to interpret inspection and repair procedures and specifications and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads and aerodynamic requirements.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision across the variables in the Range Statement as follows:

- inspection and/or testing of at least one item from each of Groups 1 to 6
- recognition of each type of damage in Groups 7 to 10
- one repair task from each of Groups 11 to 18
- one removal and installation task from each of Groups 19 to 23.

EVIDENCE GUIDE	
	This shall be established via the records in the Log of Industrial Experience and Achievement.
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Inspection and repair of aircraft structure	Inspection of aircraft structure includes: 1. Non-ferrous and ferrous alloys and composite (FRP) materials used in aircraft construction 2. Structural fastening and attachment hardware and/or devices 3. Seals and sealants 4. Glass and moulded plastics 5. Application of non-destructive testing (NDT) techniques 6. Doors, hinges and locking mechanisms for damage/misalignment

RANGE STATEMENT	
	Damage or defects may include: 7. Impact damage 8. Fatigue cracking 9. Corrosion 10. Delamination of composites and bonded structures Structural repairs may include the following: 11. Remove corrosion by chemical and mechanical methods 12. Restore protective coatings 13. Apply sealants and jointing compounds 14. Freehand precision hole generation 15. Remove and install structural hardware and fastening devices 16. Remove and replace bushes, bearings and bearing surfaces 17. Metal scab patch, flush, splice, lap and formed section repair 18. Composite external patch, scarf and stepped repairs
Specialist advice	Specialist advice is obtained from: • supervisors • specialist structures personnel
Documentation	Relevant maintenance documentation includes: • servicing schedules • maintenance manuals • applicable Defence regulations and instructions
Removable components of structure	Removable components of structures are those that are installed using bolts and/or screws. Where component removal and installation requires the removal and installation of rivets the applicable unit is MEA311C Inspect and repair/modify aircraft structures Components may include: 19. Removable components of wings, tail booms, pylons, empennage, skids, fairings and nacelles

RANGE STATEMENT	
	20. Removable components or sections of non-pressurised fuselages 21. Non-pressurised fuselage entry, cargo, access doors and associated seals (including checking and adjustment of all doors and access panels and associated locking mechanisms) 22. Non-pressurised fuselage windows and transparent panels 23. Floor panels
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance including special inspections required after events, such as heavy landings, overstress or flight through heavy turbulence • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA364A Maintain and/or repair small aircraft mechanical components or parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Mechanical Certificate IV AME training pathway. It covers the competencies required to maintain and repair a range of small aircraft mechanical components and parts. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of relevant maintenance publications to maintain and repair a range of aircraft mechanical components. Applications include fixed and rotary wing aircraft classified by CASA as small aircraft, and components in workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain and/or repair mechanical components or parts	1.1. Maintenance and/or repair requirements are determined, following disassembly and assessment of component parts for serviceability, in accordance with the relevant maintenance documentation 1.2. Tagging and repair instructions are accurately

ELEMENT	PERFORMANCE CRITERIA
	specified for parts requiring specialist repair 1.3. Appropriate materials, tools, equipment and assembly or fabrication jigs are selected and prepared for the particular specification requirements 1.4. Components or parts are maintained, repaired or modified, as approved by relevant manufacturers' bulletins or procedures, in accordance with required specifications 1.5. Mechanical component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 1.6. Mechanical components are adjusted, as required, to operate within prescribed specifications. Test equipment and rigs are used, where applicable, to confirm serviceability 1.7. Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures 1.8. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) practices including the selection and use of personal protective equipment and material safety data sheets (MSDS)
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and repair requirements for the range of components listed in the Range Statement
 - identify requirements and complete repairs and/or modifications
 - test and/or adjust components as required
 - correctly tag, seal and package completed components that are not being

REQUIRED SKILLS AND KNOWLEDGE

immediately refitted

Required knowledge

Look for evidence that confirms knowledge of:

- mechanical component operation and repair procedures and processes:
 - hoses
 - pipes
 - cables, turnbuckles and tensioning devices
 - pulleys
 - chains and sprockets
 - gear drives
 - screwjacks
 - control rods
 - bellcranks
 - links
- internal fittings and emergency equipment operation, construction, installation and maintenance/repair:
 - trim panels
 - linings and coverings
 - seats and crew/passenger restraints
 - cargo restraints
 - cabin equipment and consoles
- emergency equipment inspection and stowage requirements:
 - passenger escape systems
 - life jackets
 - rafts
 - emergency location transmitters
- applicable OHS procedures, including the selection and use of items of personal protective equipment
- how to obtain relevant MSDS
- how to identify suitable adhesives and patching materials for upholstery and trim
- inspection and test requirements for restraint system components
- safe stowage requirements for items of emergency equipment
- how to determine serviceability of items of emergency equipment
- relevant maintenance manuals, standards and specifications
- relevant regulatory requirements and standard procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use relevant maintenance publications to maintain and repair mechanical components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with aircraft components. It is essential that the relevant procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to maintenance/repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of components or parts from each of Groups 1 to 5, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment found in most routine situations would be used where appropriate.

Method of assessment

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Components or parts to be maintained and/or repaired

Components or parts to be maintained and/or repaired may include:

1. Hoses
2. Pipes
3. Cables, pulleys, chains, sprockets and gear drives
4. Control rods, bellcranks, links and screwjacks
5. Trim panels, linings, seats, cabin equipment and consoles, coverings, emergency equipment stowage (including passenger escape systems, life jackets, rafts, location transmitters, cargo, crew and/or passenger seat restraints)

Maintain

Maintain involves cleaning, inspection for wear or damage and adjustment and lubrication, where applicable

Repair

Repair comprises:

- standard techniques for pipes and replacement of eye-ends, tubes or bearings for control rods/pulleys/sprockets and bushes or bearings for bellcranks and links
- the use of adhesives and appropriate patch materials for trim and upholstery repairs (more

RANGE STATEMENT	
	extensive repairs involving sewing are covered by MEA509A Manufacture, repair and alter aircraft-related fabric components) replacement of restraint system components where sewing is not required (more extensive repairs are covered by MEA508A Maintain, install and remove restraint systems)
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance activities - individual or team- related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA365A Assess structural repair_modification requirements and evaluate structural repairs and modifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the competencies required to progress from an Aircraft Maintenance Engineer at Certificate IV to the granting of a chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines. The unit replaces MEA324B Perform structural repair/modification assessment and evaluation. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer at Certificate IV are prerequisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the Civil Aviation Safety Regulation Part 66 Syllabus subjects/topics listed in the Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires interpretation of structural repair and modification data to determine required action and to determine the compliance with airworthiness requirements of completed structural repairs or modifications. In addition, the performance of colour contrast dye penetrant non-destructive testing (NDT) on applicable components is included. Applications include both fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess structural repair or modification requirements	1.1. Structural repair requirements are determined from maintenance manuals or approved repair schemes 1.2. Damage beyond repair scheme limits is referred to relevant personnel/authorities 1.3. Modification requirements are determined from approved drawings and specifications/ instructions or requirements are referred to relevant personnel/authorities 1.4. Completed work is evaluated for compliance with airworthiness requirements
2. Perform colour contrast dye penetrant NDT	2.1. Inspection requirements are identified from relevant maintenance data or to confirm a visually identified defect 2.2. <i>Surfaces to be inspected are prepared</i> for the dye

ELEMENT	PERFORMANCE CRITERIA
	penetrant process 2.3. Dye penetrant materials are selected in accordance with standard operating procedures 2.4. Penetrant test is performed in accordance with standard operating procedures and while observing applicable occupational health and safety (OHS) precautions 2.5. Defect indications are checked and identified in accordance with standard operating procedures 2.6. Penetrant testing equipment is correctly maintained and stored while observing applicable OHS precautions 2.7. Results are recorded in accordance with standard enterprise and regulatory requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- interpreting damage limits and identifying applicable repair schemes
- interpreting all requirements of modification drawings and assessing work against them
- evaluating completed repairs and modifications for compliance with the applicable data and with airworthiness requirements
- recognising weld defects
- performing colour contrast dye penetrant NDT to confirm defects in applicable aircraft components

Required knowledge

Look for evidence that confirms a post trade level of knowledge of:

- application of regulatory requirements and of manufacturer's requirements in the determination of structural maintenance needs
- assessment of the extent of damage and an understanding of the need for a professional engineer to develop or extend a repair scheme where damage is beyond the limits of maintenance manual repair schemes, including the

REQUIRED SKILLS AND KNOWLEDGE

- identification of relevant personnel and authorities
- assessment of new equipment or component mounting requirements and an understanding of the need to have drawings and specifications developed by a professional engineer, including the identification of relevant personnel and authorities
- the need for shoring and support to maintain aerodynamic shape and for safe performance of structural maintenance
- the need for mensuration checks and the techniques used to perform them
- how to determine welding requirements and the recognition of sound welds
- the correct application of colour contrast dye penetrant NDT and the limitations of the testing method
- dye penetrant test procedures:
 - relevant OHS precautions
 - cleaning and preparation processes and materials
 - consequences of incorrect preparation
 - basic concepts and principles of NDT and appropriate use of the colour contrast dye penetrant technique
 - general properties of penetrants (penetrability, removability and visibility)
 - types of emulsifiers and developers
 - established procedures and techniques
 - defect types and their consequences
 - post-test cleaning methods
- aircraft welding regulations
- aircraft welding processes and relevant parent metal groups
- defects applicable to each welding process and parent metal group

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to determine structural repair and modification requirements using maintenance manuals, modification instructions and applicable drawings, and must be able to assess the soundness of weld repairs while identifying all safety precautions relevant to specified structural repair

EVIDENCE GUIDE	
	or modification tasks and must also be able to perform colour contrast dye penetrant NDT on relevant aircraft components.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of repair and modification applications related to the structure of aircraft. It is essential that the repair and modification procedures take into account all applicable safety precautions. The ability to interpret repair scheme and modification requirements, including applicable specifications (allowable limits) and ensure that they are applied in practice is critical. Evidence of transferability of skills and knowledge related to structural maintenance is essential. This must be demonstrated through the correct determination of repair requirements and the determination of compliance with repair schemes and modification drawings. The ability to assess sound weld repairs must also be demonstrated. Applicable work plans should take account of applicable safety (including safe handling of heavy components) and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the elements of the unit of competency are being achieved under supervision without intervention. This shall be established via simulated activities at the CASR Part 147 Maintenance Training Organisation and performance during observed workplace activities.
Context of and specific resources for assessment	Competency will be assessed in the training environment using a combination of practical exercises and scenarios.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT

work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application

Application of this unit may relate to:

- Standard practices for structural repair and modification, including damage measurement and assessment against approved repair schemes
- The process for referral of damage details and modification requirements to relevant personnel/authorities
- Supervision of repair scheme and modification incorporation, including evaluation of work against drawings and specifications
- Scheduled or unscheduled maintenance
- Individual activities or supervision of other personnel performing maintenance tasks which may include:
 - non-destructive inspection
 - welding
 - surface plating
 - surface finishing
 - preparing structural repair components
 - machining

Dye penetrant NDT procedures

Surfaces to be inspected are prepared by:

- removal of surface finishes where applicable
- thorough cleaning of the surface
- drying of the surface
- processes included in standard procedures

Dye penetrant materials may include:

- appropriate surface cleaning materials
- emulsifiers
- developers
- materials for surface cleaning after testing

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA366A Perform borescope inspections

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is required for the grant of approval for Aircraft Maintenance Engineers to perform borescope inspections on aircraft system components and engines. It covers the elements of competency required to set up and use borescopes to perform remote visual inspections required by applicable maintenance data.

Application of the Unit

Application of the unit	This unit is applied, in conjunction with units relating to the inspection, testing and troubleshooting of applicable aircraft engines, to perform and assess the results of remote visual inspections using borescopes. Applications include piston engines and gas turbine engines either installed in aircraft or in workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA313C	Inspect, test and troubleshoot piston engine systems and components
	OR	

Prerequisite units		
	MEA314C	Inspect, test and troubleshoot gas turbine engine systems and components
	OR	
	MEA322B	Test and troubleshoot gas turbine engine systems and components
	OR	
	MEA387A	Test gas turbine engines and engine modules after overhaul or repair
	OR	
	MEA388A	Repair and/or overhaul piston engines

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Set up borescope equipment	1.1. Applicable borescope equipment is obtained and assembled for use 1.2. Assembled borescope equipment is tested for correct

ELEMENT	PERFORMANCE CRITERIA
	operation
2. Perform borescope inspection	2.1. Component or engine is prepared for safe borescope inspection in accordance with <i>applicable maintenance data</i> 2.2. Borescope inspections are performed in accordance with applicable maintenance data or standard operating procedures
3. Record and assess borescope inspection results	3.1. Borescope inspection results are recorded and processed in accordance with standard enterprise procedures for the applicable borescope equipment 3.2. Identified defects are recorded and reported in accordance with standard enterprise procedures
4. Maintain and re-pack borescope equipment for storage	4.1. Borescope equipment is disassembled, maintained and cleaned in accordance with manufacturer's instructions 4.2. Borescope equipment is replaced in transport or storage containers and stored in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- selecting applicable borescope equipment and assembling it for use
- identifying required borescope inspections and required techniques using applicable maintenance data
- setting up the applicable system component or engine in accordance with applicable maintenance data for safe borescope inspection
- applying borescope inspection techniques to safely perform required inspections without damage to engine components
- identifying and correctly assessing and reporting/recording defect indications
- maintaining and correctly storing borescope equipment after use

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- types of borescope and their applications
- how to assemble borescope equipment and prepare it for use
- use of associated imaging and recording equipment, such as video and digital camera
- use of maintenance data to identify borescope inspection requirements
- borescope inspection techniques and safety
- remote engine rotation equipment
- defect assessment techniques
- borescope inspection reporting and recording requirements
- borescope maintenance and storage requirements

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and apply borescope inspection techniques to inspect piston or gas turbine engine internal components on fixed or rotary wing aircraft or in workshops while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of remote visual inspection applications associated with internal engine components. It is essential that inspection procedures take into account all safety precautions associated with borescope inspection techniques and the applicable engine.

Evidence of transferability of skills and knowledge related to borescope inspection and assessment of results is essential. This may be demonstrated through application across a number of engine types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Demonstrated knowledge of both borescope inspection techniques and of the subject engine will be necessary before undertaking any action. The work plan should take account of applicable safety and quality

EVIDENCE GUIDE	
	requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of Competency are being achieved under routine supervision on representative range of borescope inspection tasks. This shall be established via the records in the Log of Industrial Experience and Achievement, or where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Borescope equipment	Borescope equipment may include: • rigid optical borescopes • flexible optical borescopes • video borescopes

RANGE STATEMENT	
	• camera attachments for optical borescopes • remote engine rotation equipment
Applicable maintenance data	Applicable maintenance data may include: • borescope user manuals • engine maintenance manuals • servicing schedules • regulatory requirements, such as Airworthiness Directives or Special Technical Instructions
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA380A Repair and/or overhaul aircraft hydraulic system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair a range of aircraft hydraulic system components.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul hydraulic system components in workshops. Applications include components from fixed and rotary wing aircraft hydraulic systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Hydraulic components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot hydraulic components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Hydraulic component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect hydraulic component parts	3.1.Hydraulic component parts are dismantled in accordance with maintenance manuals 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify hydraulic components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust hydraulic components	5.1.Hydraulic component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2.Components are adjusted, tested or calibrated to operate within prescribed specifications

ELEMENT	PERFORMANCE CRITERIA
	5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using material safety data sheets (MSDS) and applicable items of personal protective equipment
- using relevant maintenance documentation and aircraft/component manuals relating to hydraulic system components to:
 - recognise state of serviceability and overhaul or repair requirements
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes
 - dismantle and inspect component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify component parts
 - assemble, test for correct operation and adjust components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the correct use of personal protective equipment
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes
- hydraulic test rigs and their operation
- compressed air and nitrogen charging equipment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft hydraulic system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one component from each of Groups 1 to 3 in the Range Statement including demonstration of the repair processes listed in Groups 4 to 9. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work

EVIDENCE GUIDE

assessment	environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide

Hydraulic components

Hydraulic components may include:

1. Valves, pumps, motors, actuators, regulators, struts/oleos and brake units
2. Accumulators, filters and reservoirs
3. Rigid and flexible pipelines, hoses and fittings

Repair of component parts

Repair of component parts may include:

4. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping
5. Removal of corrosion within maintenance manual limits
6. Replacement of seals and backing rings
7. Replacement of bearings
8. Application of surface treatments, such as alodining

RANGE STATEMENT	
	9. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA381A Repair and/or overhaul aircraft pneumatic system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair a range of aircraft pneumatic system components.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul pneumatic system components in workshops. Applications include components from fixed and rotary wing aircraft pneumatic systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Pneumatic components</i> are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot pneumatic components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Pneumatic component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect pneumatic parts	3.1.Pneumatic component parts are dismantled in accordance with maintenance manuals 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify pneumatic components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust pneumatic components	5.1.Pneumatic component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2.Components are adjusted, tested or calibrated to operate within prescribed specifications

ELEMENT	PERFORMANCE CRITERIA
	5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using material safety data sheets (MSDS) and relevant items of personal protective equipment
- using relevant maintenance documentation and aircraft/component manuals relating to pneumatic, pressurisation and air cycle air conditioning system components to:
 - recognise state of serviceability and overhaul or repair requirements
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes
 - dismantle and inspect component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify component parts
 - assemble, test for correct operation and adjust components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- identification and use of items of personal protective equipment
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes
- the use of pneumatic test rigs

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft pneumatic system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one component from each of Groups 1 to 3 referenced in the Range Statement including demonstration of the repair processes listed in Groups 4 to 9. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work

EVIDENCE GUIDE	
assessment	environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Pneumatic components	Pneumatic components may be from systems, such as pressurisation, air cycle air conditioning and pneumatic, and may include: 1. Valves, pumps, motors, expansion turbines, actuators, regulators, temperature sensors, mechanical pressurisation controllers, temperature controllers and thrust reversers 2. Heat exchangers and pressure vessels 3. Rigid and flexible pipelines, hoses, fittings and ducting
Repair of component parts	Repair of component parts may include: 4. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping 5. Removal of corrosion within maintenance

RANGE STATEMENT	
	manual limits 6. Replacement of seals and backing rings 7. Replacement of bearings 8. Application of surface treatments, such as alodining 9. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA382A Repair and/or overhaul aircraft fuel system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair a range of aircraft fuel system components.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul fuel system components in workshops. Applications include components from fixed and rotary wing aircraft fuel systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Fuel system components</i> are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot fuel system components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Fuel system component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect fuel system component parts	3.1.Fuel system component parts are dismantled in accordance with maintenance manuals 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify fuel system components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust fuel system components	5.1.Fuel system component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2.Components are adjusted, tested or calibrated to operate within prescribed specifications

ELEMENT	PERFORMANCE CRITERIA
	5.3.Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4.Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using material safety data sheets (MSDS) and applicable items of personal protective equipment
- using relevant maintenance documentation and aircraft/component manuals relating to fuel system components to:
 - recognise state of serviceability and overhaul or repair requirements
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes
 - dismantle and inspect component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify component parts
 - assemble, test for correct operation and adjust components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the use of applicable items of personal protective equipment
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes
- the use of fuel system test rigs

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft fuel system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one component from each of Groups 1 and 2 in the Range Statement including demonstration of the applicable repair processes listed in Groups 3 to 9. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work

EVIDENCE GUIDE	
assessment	environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Fuel system components	Fuel system components may include: 1. Valves, pumps and control units 2. Filters, rigid and flexible pipelines, hoses, fittings and flexible fuel tanks
Repair of component parts	Repair of component parts may include: 3. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping 4. Removal of corrosion within maintenance manual limits 5. Replacement of seals and backing rings 6. Replacement of bearings 7. Application of surface treatments, such as alodining 8. Restoration of paint finishes

RANGE STATEMENT	
	9. Repair of flexible fuel tank leaks
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA383A Repair and_or overhaul gas turbine engine air inlet and compressor components and_or modules

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair components of gas turbine engine or engine module air inlet and compressor sections.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft gas turbine air inlet and compressor components in workshops. Applications include air inlet and compressor components from turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Air inlet and compressor components</i> are inspected and/or operated through prescribed test procedures to establish serviceability and confirm defects, if necessary

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot air inlet and compressor components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Air inlet and compressor component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect air inlet and compressor parts	3.1.Air inlet and compressor component parts are dismantled in accordance with maintenance manual 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify air inlet and compressor components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components is undertaken, where required, by reference to relevant manufacturers' bulletins or procedures and/or customer requirements
5. Assemble and adjust air inlet and compressor	5.1.Air inlet and compressor component parts are assembled within specified tolerances and in accordance with the appropriate maintenance

ELEMENT	PERFORMANCE CRITERIA
components	documents 5.2.Support/safety equipment, where fitted, is removed at the appropriate time 5.3.Components are adjusted to ensure that fits and clearances are within prescribed specifications 5.4.Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for air inlet and compressor components
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes in air inlet and compressor components
 - dismantle and inspect air inlet and compressor component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify air inlet and compressor component parts
 - assemble and adjust air inlet and compressor components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant material safety data sheets (MSDS)
- the use of applicable items of personal protective equipment
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes, including inspection, rework, repair and reclamation, assembly, balancing of rotating assemblies and final adjustment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul air inlet and compressor components from aircraft gas turbine engines and/or modules while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with gas turbine engine components and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different gas turbine engine components and/or modules. Ability to assess component/module serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 5 listed in the Range Statement (Groups 2 and 5 may be omitted if

EVIDENCE GUIDE	
	not applicable to the enterprise), including demonstration of the repair processes listed in Groups 6 to 11. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Air inlet and compressor components	Air inlet and compressor components from fixed or rotary wing gas turbine engines (turbo-jet, turbofan, turboshaft, turboprop) or engine modules, or auxiliary power units and may include: 1. Air inlet structure and blow-in doors where these items are part of an engine change unit or engine module 2. Fan, where applicable 3. Inlet guide vanes

RANGE STATEMENT	
	4. Centrifugal or axial flow compressor assemblies (low and high pressure) 5. Compressor bleed valves, where applicable
Repair of component parts	Repair of component parts may include: 6. Finishing or re-finishing of metal surfaces through processes, such as polishing, lapping and blending of damage within maintenance manual limits 7. Removal of corrosion within maintenance manual limits 8. Replacement of seals and gaskets 9. Replacement of bearings 10. Application of surface treatments, such as alodining 11. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA384A Repair and_or overhaul gas turbine engine combustion section components and_or modules

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair components of gas turbine engine or engine module combustion sections.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft gas turbine engine or engine module combustion section components. Applications include combustion section components and modules from turbo-jet, turbofan, turboshaft, turboprop engines, engine modules or auxiliary power units.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Combustion section components are inspected and/or operated through prescribed test procedures to establish serviceability and confirm defects, if necessary

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot combustion section components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Combustion section component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect combustion section component parts	3.1.Combustion section component parts are dismantled in accordance with maintenance manual 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify combustion section components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components is undertaken, where required, by reference to relevant manufacturers' bulletins or procedures and/or customer requirements
5. Assemble and adjust combustion section components	5.1.Combustion section component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2.Support/safety equipment, where fitted, is removed

ELEMENT	PERFORMANCE CRITERIA
	at the appropriate time 5.3. Components are adjusted to ensure that fits and clearances are within prescribed specifications 5.4. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.5. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for combustion section components
 - test and accurately and efficiently troubleshoot engine combustion component unserviceabilities and document the causes
 - dismantle and inspect combustion section component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify combustion section component parts
 - assemble and adjust combustion section components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant material safety data sheets (MSDS)
- the use of applicable items of personal protective equipment
- fault diagnosis techniques
- combustion section and component operation
- repair and overhaul procedures and processes, including inspection, rework, repair and reclamation, assembly, testing and final adjustment

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft gas turbine engine or engine module combustion section components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with gas turbine engine components and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved. Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different gas turbine engine components and/or modules. Ability to assess component/module serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before under taking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 and 2 listed in the Range Statement, including demonstration of the

EVIDENCE GUIDE	
	repair processes listed in Groups 3 to 5. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Combustion section components and/or modules	Combustion section components and/or modules from fixed or rotary wing gas turbine engine (turbo-jet, turbofan, turboshaft, turboprop), engine module or auxiliary power unit and may include: 1. Fuel manifold and nozzles 2. Combustion chamber (multiple can, can-annular or annular)
Repair of component parts	Repair of component parts may include: 3. Finishing or re-finishing of metal surfaces through processes such as polishing and

RANGE STATEMENT	
	lapping 4. Removal of corrosion within maintenance manual limits 5. Replacement of seals and gaskets
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA385A Repair and_or overhaul gas turbine engine turbine and exhaust section components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair components of gas turbine engine or engine module turbine and exhaust sections.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft gas turbine engine turbine and exhaust section components in workshops. Applications include turbine and exhaust section components from turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Turbine and exhaust section components</i> are inspected and/or operated through prescribed test procedures to establish serviceability and confirm

ELEMENT	PERFORMANCE CRITERIA
	defects, if necessary 1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot turbine and exhaust section components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Turbine and exhaust section component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect turbine and exhaust section component parts	3.1.Turbine and exhaust section component parts are dismantled in accordance with maintenance manual 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify turbine and exhaust section components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components is undertaken, where required, by reference to relevant manufacturers' bulletins or procedures and/or customer requirements
5. Assemble and adjust turbine and exhaust	5.1.Turbine and exhaust section component parts are balanced where required and assembled within

ELEMENT	PERFORMANCE CRITERIA
section components	specified tolerances and in accordance with the appropriate maintenance documents 5.2.Support/safety equipment, where fitted, is removed at the appropriate time 5.3.Components are adjusted to ensure that fits and clearances are within prescribed specifications 5.4.Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.5.Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for turbine and exhaust section components
 - test and accurately and efficiently troubleshoot turbine and exhaust section component unserviceabilities and document the causes
 - dismantle and inspect turbine and exhaust section component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify turbine and exhaust section component parts
 - assemble and adjust turbine and exhaust section components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant material safety data sheets (MSDS)
- the use of applicable items of personal protective equipment
- fault diagnosis techniques

REQUIRED SKILLS AND KNOWLEDGE

- turbine and exhaust section and component operation
- repair and overhaul procedures and processes, including inspection, rework, repair and reclamation, assembly, balancing of rotating assemblies and final adjustment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft gas turbine engine and engine module turbine and exhaust section components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with gas turbine engine components and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different gas turbine engine components and/or modules. Ability to assess component/module serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

EVIDENCE GUIDE	
	A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 7 listed in the Range Statement (Groups 2, 3, 6 and 7 may be omitted where they are not applicable to the enterprise), including demonstration of the repair processes listed in Groups 8 to 11. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Turbine and exhaust section components	Turbine and exhaust section components from fixed or rotary wing gas turbine engine (turbo-jet, turboprop, turboshaft, turboprop), engine module or auxiliary power unit and may include:

RANGE STATEMENT	
	1. High and low pressure turbine assemblies 2. Free turbine (where applicable) 3. Automatic turbine rotor clearance control system (where applicable) 4. Engine tail cone and exhaust struts 5. Jet pipe that is part of the engine change unit or module 6. Thrust reversers (where applicable) 7. Afterburner system where it is part of the engine change unit or module (where applicable)
Repair of component parts	Repair of component parts may include: 8. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping 9. Removal of corrosion within maintenance manual limits 10. Replacement of seals and gaskets 11. Replacement of bearings
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA386A Repair and/or overhaul gas turbine engine ancillary section components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair components of gas turbine engine or engine module ancillary section.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft gas turbine engine ancillary section components in workshops. Applications include ancillary section components from turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Ancillary section components</i> are inspected and/or operated through prescribed test procedures to establish serviceability and confirm defects, if necessary

ELEMENT	PERFORMANCE CRITERIA
	1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot ancillary section components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Ancillary section component/module faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect ancillary section component parts	3.1.Ancillary section component parts are dismantled in accordance with maintenance manual 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify ancillary section components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components is undertaken, where required, by reference to relevant manufacturers' bulletins or procedures and/or customer requirements
5. Assemble and adjust ancillary section components	5.1.Ancillary section component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents

ELEMENT	PERFORMANCE CRITERIA
	5.2.Support/safety equipment, where fitted, is removed at the appropriate time 5.3.Components are adjusted to ensure that fits and clearances are within prescribed specifications 5.4.Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.5.Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant material safety data sheets (MSDS) and items of personal protective equipment
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for ancillary section components
 - test and accurately and efficiently troubleshoot ancillary section component unserviceabilities and document the causes
 - dismantle and inspect ancillary section component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify ancillary section component parts
 - assemble and adjust ancillary section components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the use of applicable items of personal protective equipment
- fault diagnosis techniques

REQUIRED SKILLS AND KNOWLEDGE

- ancillary section and component operation
- repair and overhaul procedures and processes, including inspection, rework, repair and reclamation, assembly and final adjustment

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft gas turbine engine and engine module ancillary section components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with gas turbine engine components and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different gas turbine engine components and/or modules. Ability to assess component/module serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

EVIDENCE GUIDE	
	A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 3 listed in the Range Statement (Groups 2 and 3 are required only where they are applicable to the enterprise), including demonstration of the repair processes listed in Groups 4 to 8. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Ancillary section components	Ancillary section components from fixed or rotary wing gas turbine engine (turbo-jet, turbofan, turboshaft, turboprop), engine module or auxiliary power unit may include:

RANGE STATEMENT	
	1. Accessory (or high-speed) gearbox 2. Turboprop reduction gearbox 3. Turboshaft drive shaft or reduction gearbox
Repair of component parts	Repair of component parts may include: 4. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping 5. Replacement of seals and gaskets 6. Replacement of bearings 7. Application of surface treatments 8. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units	

Co-requisite units		

MEA387A Test gas turbine engines and engine modules after overhaul or repair

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to test run gas turbine engines or engine modules after overhaul or repair.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to test run aircraft gas turbine engines and engine modules in engine test stands following overhaul or repair in workshops. Applications include turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA383A	Repair and/or overhaul gas turbine engine air inlet and compressor

Prerequisite units		
		components and/or modules
	MEA384A	Repair and/or overhaul gas turbine engine combustion section components and/or modules
	MEA385A	Repair and/or overhaul gas turbine engine turbine and exhaust section components
	MEA386A	Repair and/or overhaul gas turbine engine ancillary section components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare engine or module for testing	1.1. Maintenance documentation is checked to confirm that engine or module is ready for testing 1.2. Where required, engine modules are assembled into a test engine 1.3. Engine is configured for testing in accordance with maintenance manual requirements and standard enterprise procedures

ELEMENT	PERFORMANCE CRITERIA
2. Install engine in test stand	2.1.Engine is installed in test stand in accordance with maintenance manual requirements and standard enterprise procedures 2.2.Fuel, oil and fluid levels are checked 2.3.Engine test stand is prepared for operation
3. Run and test engine or module performance	3.1.Engine is started and operating parameters are checked 3.2.Engine performance is tested and trimmed, where applicable, in accordance with maintenance manual requirements and standard enterprise procedures 3.3.Engine operating parameters and test results are recorded in accordance with standard enterprise procedures
4. Remove engine from test stand	4.1.Engine is removed from test stand in accordance with maintenance manual requirements and standard enterprise procedures 4.2.Serviceable engines or modules are configured, inhibited and prepared in accordance with maintenance manual requirements and standard enterprise procedures for transport or storage 4.3.Unserviceable engines or modules are returned to workshop in accordance with standard enterprise procedures for rectification or rework

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant material safety data sheets (MSDS) and items of personal protective equipment
- using relevant maintenance manuals and standard enterprise procedures to:
 - prepare engines or modules for test running
 - install engines in test stands
 - test run and trim engines where applicable

REQUIRED SKILLS AND KNOWLEDGE

- record engine operating parameters
- remove engines from the test stand
- complete documentation
- configure and inhibit serviceable engines and modules for transport or storage

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the use of applicable items of personal protective equipment
- test stand operation
- engine and module test requirements
- engine operating parameters and adjustment methods

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and gas turbine engine theory knowledge and use maintenance publications to test and adjust the operation of overhauled engines or modules while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with gas turbine engines and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of gas turbine engine and/or module test runs. Capability to interpret test procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate

EVIDENCE GUIDE	
	knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot engine or module faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of engine/module test runs. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment in an applicable engine test stand. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Engines	Engines include: fixed or rotary wing gas turbine engine (turbo-jet, turbofan, turboshaft, turboprop), or auxiliary power unit
Modules	Modules may include:

RANGE STATEMENT	
	various combinations of gas turbine engine sections as determined by the manufacturer
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance - individual or team-related activities - complex adjusting and testing of engine performance to be carried out under supervision
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA388A Repair and/or overhaul piston engines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair aircraft piston engines.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft piston engines and components. Applications include fixed and rotary wing aircraft piston engines and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes

Prerequisite units		
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Piston engine components</i> are inspected and/or operated through prescribed test procedures to establish serviceability and confirm defects, if necessary 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components

ELEMENT	PERFORMANCE CRITERIA
	1.4. Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot piston engine components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4. Piston engine component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect piston engine components/parts	3.1. Piston engine component parts are dismantled in accordance with maintenance manual 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4. Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify piston engine components or parts	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components is undertaken where required by reference to relevant manufacturer's bulletins or procedures and/or customer requirements
5. Assemble, test and adjust piston engine components	5.1. Piston engine component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2. Components are tested, adjusted or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for piston engines and components as listed in the Range of Variables
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes in piston engines and components
 - dismantle and inspect piston engine component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify piston engine component parts
 - assemble, test for correct operation and adjust piston engine components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the

EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft piston engines and components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different piston engines and/or components. Ability to assess component/module serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 5 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	

EVIDENCE GUIDE**Guidance information for assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide

Piston engine components

Piston engine components may include:

1. Engine assembly
2. Main components, accessories and drives
3. Ignition and starter systems
4. Fuel and oil systems
5. Supercharger, turbocharger and aspirated systems (as applicable)

Application

Application of this unit may relate to:

- scheduled or unscheduled maintenance
- individual or team-related activities
- complex testing and adjusting of components and where this is undertaken it may be carried out under supervision at the appropriate level

Procedures and requirements

Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA389A Repair and/or overhaul propellers

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair aircraft propellers and components.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft propellers and components. Applications include piston and turbine engine propellers and components, excluding propeller blades that are made from materials other than metal.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes

Prerequisite units		
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. <i>Propellers and component</i> defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required 1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is identified and

ELEMENT	PERFORMANCE CRITERIA
	documented in accordance with standard enterprise procedures
2. Troubleshoot propeller components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4. Propeller component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect propeller parts	3.1. Propeller component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4. Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify propeller components or parts	4.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust propeller components	5.1. Component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2. Propeller components are adjusted, tested or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and

ELEMENT	PERFORMANCE CRITERIA
	modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for propellers and propeller components as listed in the Range Statement
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes with regard to propeller components
 - dismantle and inspect propeller component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify propeller component parts
 - assemble, balance, test for correct operation and adjust propeller components and propellers
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

EVIDENCE GUIDE	
Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul aircraft propellers and components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved. Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of propeller, engine and constant speed unit operation, individually and as a system, will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 4 in the Range Statement and on a representative range of the repair processes in Groups 5 to 10. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation.

EVIDENCE GUIDE	
	It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Propellers and components	Propellers and components may include: 1. Fixed pitch, constant speed, feathering and reversing propellers and spinners 2. Anti ice/de-ice equipment 3. Propeller blades - metal 4. Hardware
Repair of component parts	Repair of component parts may include: 5. Finishing or re-finishing of metal surfaces through processes, such as polishing, lapping and blending of damage within maintenance manual limits 6. Removal of corrosion within maintenance manual limits 7. Replacement of seals and gaskets 8. Replacement of bearings 9. Application of surface treatments, such as

RANGE STATEMENT	
	alodining 10. Restoration of paint finishes
Power plant relationship	Repair and/or overhaul of propeller and components may be related to aircraft power plant systems
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA390A Repair and/or overhaul rotary wing dynamic components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair rotary wing aircraft rotor assembly components, transmissions and drive shafts.

Application of the Unit

Application of the unit	This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul rotary wing dynamic components. Applications include rotor assemblies and components, transmissions, drive shafts and couplings from piston and turbine engine rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. <i>Rotary wing component</i> defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. Components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required 1.3. Modification status is clearly established to assist in

ELEMENT	PERFORMANCE CRITERIA
	determining the overhaul requirements for the components 1.4. Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot rotary wing components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2. Logical processes are used to ensure efficient and accurate troubleshooting 2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4. Rotary wing component faults are located and the causes of the faults are clearly identified 2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect rotary wing component parts	3.1. Rotary wing component parts are dismantled in accordance with maintenance manuals 3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4. Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify rotary wing components or parts	4.1. Rotary wing component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust rotary wing components	5.1. Component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2. Rotary wing components are adjusted, tested or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and

ELEMENT	PERFORMANCE CRITERIA
	packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for rotary wing components as listed in the Range Statement
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes in rotary wing components
 - dismantle and inspect rotary wing component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify rotary wing component parts
 - assemble, balance as required, test for correct operation and adjust rotary wing components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and component theory knowledge and use maintenance publications to repair and overhaul rotary wing dynamic components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved.

This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 3 in the Range Statement and on a representative range of the repair tasks in Groups 4 to 9. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation.

EVIDENCE GUIDE

	It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Rotary wing components	Rotary wing components may include: 1. Rotor blades 2. Rotor heads, hinge assemblies and swashplates 3. Transmission gear boxes, drive shafts and couplings
Repair of component parts	Repair of component parts may include: 4. Finishing or re-finishing of metal surfaces through processes, such as polishing, lapping and blending of damage within maintenance manual limits 5. Removal of corrosion within maintenance manual limits 6. Replacement of seals and gaskets 7. Replacement of bearings 8. Application of surface treatments, such as alodining

RANGE STATEMENT	
	9. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA391A Repair and/or overhaul aircraft mechanical system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the MEA40710 Certificate IV in Aeroskills (Mechanical) workshop training pathway. It covers the competencies required to overhaul and repair a range of aircraft mechanical system components.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of relevant maintenance manuals, drawings and specifications to repair and/or overhaul a range of aircraft mechanical components from systems, such as flight controls, landing gear retraction, nose wheel steering and transmissions other than those that are part of power plant assemblies. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	1.1. Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers 1.2. <i>Mechanical components</i> are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as

ELEMENT	PERFORMANCE CRITERIA
	required 1.3.Modification status is clearly established to assist in determining the overhaul requirements for the components 1.4.Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot mechanical components	2.1.Available information from maintenance records and test results is used, where necessary, to assist in fault determination 2.2.Logical processes are used to ensure efficient and accurate troubleshooting 2.3.Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement 2.4.Mechanical component faults are located and the causes of the faults are clearly identified 2.5.Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect mechanical component parts	3.1.Hydraulic component parts are dismantled in accordance with maintenance manuals 3.2.Component parts are assessed for serviceability in accordance with the relevant maintenance documentation 3.3.Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures 3.4.Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation 3.5.Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify mechanical components or parts	4.1.Component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2.Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust mechanical components	5.1.Mechanical component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2.Components are adjusted, tested or calibrated to

ELEMENT	PERFORMANCE CRITERIA
	operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures
- using material safety data sheets (MSDS) and applicable items of personal protective equipment
- using relevant maintenance documentation and aircraft/component manuals relating to mechanical system components to:
 - recognise state of serviceability and overhaul or repair requirements
 - test and accurately and efficiently troubleshoot unserviceabilities and document the causes
 - dismantle and inspect component parts for serviceability and identify repair requirements as applicable
 - repair/replace/modify component parts
 - assemble, test for correct operation and adjust components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the correct use of personal protective equipment
- fault diagnosis and component part inspection techniques
- system and component operation
- repair and overhaul procedures and processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use relevant maintenance manuals, drawings and specifications to repair and/or overhaul mechanical components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of repair and overhaul applications associated with aircraft mechanical components. It is essential that the relevant procedures are interpreted and applied to ensure quality and safety standards are achieved.

Evidence of transferability of skills and knowledge related to mechanical component repair and overhaul is essential. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on sufficient items from Groups 1 to 4 in the Range Statement to demonstrate the range of repair and overhaul activities listed in Groups 5 to 10. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment found in most routine situations would be used where appropriate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Mechanical components:	Mechanical components may include: 1. Gear boxes and transmissions (except for helicopter components which are covered by MEA373A Repair and/or overhaul rotary wing dynamic components) 2. Screwjacks 3. Mechanical actuators 4. Control rods, bellcranks, walking beams and links
Repair of component parts	Repair of component parts may include: 5. Finishing or re-finishing of metal surfaces through processes, such as polishing and lapping 6. Removal of corrosion within maintenance manual limits 7. Replacement of seals and gaskets 8. Replacement of bearings 9. Application of surface treatments, such as alodining 10. Restoration of paint finishes

RANGE STATEMENT	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Component repair and overhaul

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA401B Inspect aircraft structures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance AME Certificate IV and of the Mechanical AME Certificate IV training pathways. It covers the competencies required for the inspection of fixed and rotary wing aircraft structures. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and maintenance documentation and manuals to inspect aircraft structure and identify damage and deterioration. Applications include the structure of fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation

Prerequisite units		
		maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect aircraft structure	1.1. Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify specific inspection

ELEMENT	PERFORMANCE CRITERIA
	requirements. 1.2. Appropriate <i>preparation and access to the aircraft structure</i> is undertaken to allow for proper inspection in accordance with maintenance documentation. 1.3. Aircraft structure is visually or physically checked for signs of deformation, defects or damage in accordance with maintenance documentation and approved procedures. 1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required. 1.5. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of applicable OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying various aircraft metals and their basic properties
- identifying potential causes of structural failure
- demonstrating appropriate cleaning procedures to enable structure inspection
- demonstrating correct inspection procedures, in particular pressurised aircraft, in accordance with aircraft and procedures manuals
- identifying damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of:
 - impact
 - fatigue
 - corrosion
- identifying the various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft
- identifying composite materials used in aircraft construction, associated safety

REQUIRED SKILLS AND KNOWLEDGE

- precautions and hazards
- inspecting damage and assessing composite components/structures for:
 - impact damage
 - fatigue

Required knowledge

Look for evidence that confirms knowledge of:

- aircraft construction principles
- structural component attachment methods
- describing the construction methods used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels in pressurised and unpressurised aircraft
- defining of structural terms, ie failsafe, stress, strain, shear, cycles
- describing non-destructive inspection methods and application of the various techniques
- describing construction methods of, and assessing common defects in, aircraft plastic transparencies
- describing basic constructional features of, and assessing common defects in, glass windscreens
- defining the terms associated with composite materials

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to prepare aircraft structure for inspection and identify structural damage and deterioration while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate

The underlying skills inherent in this unit should be transferable across a range of structural inspections

EVIDENCE GUIDE	
competency in this unit	associated with aircraft maintenance. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure. Evidence is required of the ability to interpret and apply aircraft structural inspection requirements. This may be demonstrated through application across a range of structural components and materials. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one task from Group 1 and inspection of at least one item from each of Groups 2 to 6, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Access to structure	<i>Preparation and access may include:</i> 1. Preparation for NDI (access to relevant structural zones and components)
Aircraft structure	<i>The aircraft structure may include:</i> 2. Non-ferrous and ferrous alloys and composites used in aircraft construction 3. Structural fastening 4. Attachment hardware and/or devices 5. Seals, sealants 6. Glass, moulded plastics
Inspection techniques	Inspection techniques may include visual inspection, physical checks, mensuration and alignment.
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standards specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA402B Fabricate aircraft structural components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance Certificate IV training pathway. It covers the competencies required to fabricate aircraft structural components in accordance with specifications and drawings. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of drawings, specifications and maintenance publications to fabricate structural components from aluminium alloys and steel alloys at various temper. Applications include components for fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret specifications and organise materials	1.1. Specifications and drawings are interpreted to determine material requirements. 1.2. Procedure for fabricating component is determined in order to plan equipment use. 1.3. Material is correctly identified to meet specifications. 1.4. All materials and equipment are organised.

ELEMENT	PERFORMANCE CRITERIA
2. Prepare material and tooling	2.1. Dimensions are translated to material in accordance with specifications. 2.2. Cutting and forming equipment is prepared and adjusted to ensure accuracy of fabrication. 2.3. Material is cut according to specifications ensuring minimisation of wastage and maintenance of surplus material identification. 2.4. Material requiring special treatment is made ready for the appropriate processes. 2.5. Solution treatment of materials is carried out in accordance with approved procedures and specifications.
3. Form material	3.1. Appropriate forming procedure is determined which ensures specifications are met and the most suitable method selected. 3.2. Forming equipment is operated correctly and safely. 3.3. Hand forming is accurately carried out where necessary. 3.4. Material is formed to meet specifications.
4. Hand correction of fabricated components	4.1. Components are checked for irregularities and correction requirements determined. 4.2. Irregularities are removed to meet required dimensions and specifications.
5. Inspect components	5.1. Fabricated components are inspected to confirm dimensional accuracy and specifications are met. 5.2. Checking fixtures are used where appropriate to ensure requirements are met. 5.3. Components requiring special or further treatment are made ready for the appropriate processes. 5.4. Completed components are tagged or identified as required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- application of applicable OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying various aircraft metals and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- handling and storing aircraft metals to industry standards
- identifying aircraft structural assembly fasteners by interpretation of markings, numbering systems, size, shape and colour
- fabrication of aircraft structural components and parts by:
 - correctly interpreting drawings (including third angle projection, isometric, sectional formats and hand sketches)
 - developing component flat pattern using basic drawing tools, geometric drawing processes, parallel, radial and triangulation methods, calculating and applying bend allowance/deduction/setback (an understanding of flat pattern development terminology is required)
 - using appropriate hand tools, machines (stretching, shrinking, bending, cutting, drilling, rolling, wheeling and folding), forming blocks, templates, presses to form/produce dished, domed, curved components, bent/angled (L, Z, U, hat) sections and lightning holes, flanges, joggles
 - assembling component parts using appropriate hand and machine tools and standard aircraft fasteners to industry standards
- applying appropriate metal heat treatment processes
- applying appropriate metal surface treatments

Required knowledge

Look for evidence that confirms knowledge of aircraft construction principles

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use drawings, specifications and maintenance publications to fabricate

EVIDENCE GUIDE	
	aircraft structural components from a range of aircraft metals while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of aircraft applications. It is essential that procedures take into account all safety precautions and quality requirements. Skill and knowledge application must include set back, bend allowance and other standard practices associated with forming of material. Evidence of knowledge and skills associated with the broad range of structural fabrication techniques and their application to different materials used in aircraft manufacture will be required to supplement evidence of ability to fabricate components. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of structural fabrication tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work

RANGE STATEMENT	
situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Competency is to be assessed:	using materials comprising various types of sheet metal used in aircraft manufacture, including aluminium alloys and structural steel alloys across a range of temper.
Machinery processes are to include:	bending, cutting, rolling, shrinking and stretching.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA403B Repair/modify aircraft structure

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance Certificate IV training pathway. It covers the competencies required for the repair of fixed and rotary wing aircraft. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills, the use of special tools and structural repair manuals and schemes to repair aircraft structure. Applications include the structure of fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA401B	Inspect aircraft structures
	MEA402B	Fabricate aircraft structural components

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake repair	1.1. Extent of damage is correctly assessed to assist in determining <i>repair procedure</i>. 1.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage. 1.3. Appropriate modification or repair scheme is identified in accordance with structural repair manual and/or approved data. 1.4. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage is out of limits. 1.5. All materials and equipment required are organised.
2. Repair/modify aircraft structure	2.1. Structural repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out. 2.2. Work area is cleaned of all waste material or contaminants. 2.3. Components are adjusted, where necessary, to operate within prescribed specifications. 2.4. Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required.

ELEMENT	PERFORMANCE CRITERIA
	2.5. Required documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying various aircraft metals and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- identifying various aircraft composite materials and their basic properties by interpretation of markings and visual means
- handling and storing aircraft metals and composite materials including sealing agents, to industry standards
- identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour
- correctly interpret and /or produce repair scheme/modification drawings (including third angle projection, isometric, sectional formats and hand sketches)
- using appropriate hand tools and machines to remove and assemble aircraft structural components, parts, sections and skin including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins)
- applying correct removal, installation and repair techniques for:
 - a range of rivets (blind and solid) using hand, squeeze and pneumatic situations
 - a range of close tolerance fasteners (standard and oversize - hilocks, taper locks) including hole preparation
 - threaded devices including internal and external thread cutting, helicoil inserts and damaged stud replacement
 - hardware assembled by close tolerance fits using heat, cooling and force methods, including bearings, bushes and inserts
- correct support of the aircraft structure by jacking, trestling and/or jiggling methods
- performing a range of metal structure and composite material repair techniques including:

REQUIRED SKILLS AND KNOWLEDGE

- metal scab patch, flush, splice, lap and formed section repair
- composite external patch repairs
- metal to metal and metal to composite bonding
- applying structural corrosion removal/treatment techniques
- restoring aircraft structure sealing and surface finishes

Required knowledge

Look for evidence that confirms knowledge of: aircraft construction principles.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use special tools and structural repair manuals and schemes to repair aircraft structure while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices and processes associated with assembly.

Evidence of knowledge about repair techniques and the use of the standard repair manual in a range of different repair situations will be necessary to supplement evidence of ability to plan and undertake structure and component repair.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one item from each of Groups 1 to 7 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent

EVIDENCE GUIDE	
	Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Repair procedures	<i>Repair procedures may include:</i> 1. Remove corrosion by chemical and mechanical methods 2. Restore protective coatings 3. Apply sealants and jointing compounds 4. Freehand precision hole generation 5. Remove and install structural hardware, fastening devices, bushes, bearings and bearing surfaces 6. Remove and repair damaged sections and reinstall

RANGE STATEMENT	
	7. Minor repairs to non-metallic materials.
Procedures and requirements	Refer to industry standard specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA404B Disassemble and reassemble aircraft structure for major repair or modification

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance Certificate IV training pathway. It covers the competencies required to disassemble and reassemble aircraft structure for the purpose of major repair or modification. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and use of maintenance publications, drawings, and appropriate jigs, fixtures and tools to disassemble and reassemble aircraft structure for major repairs or modifications. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA403B	Repair/modify aircraft structure

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret specifications and organise materials.	1.1. Specifications and drawings or repair scheme documentation are interpreted to determine component and material requirements. 1.2. Procedure for assembly/disassembly of structure is determined in order to plan equipment use. 1.3. Appropriate jigs, fixtures or bracing requirements are determined to ensure maintenance of contour/structural integrity during disassembly/assembly operations. 1.4. All components and equipment are organised.
2. Prepare aircraft or sub-assembly for structural disassembly.	2.1. Structure is supported and prepared with appropriate jigs, fixtures or bracing as required. 2.2. Structural component removal is undertaken to provide access as required.
3. Disassemble aircraft structure or sub-assembly.	3.1. Aircraft standard practices are applied to the removal of structural hardware and fasteners. 3.2. Disassembled components are tagged to facilitate correct reassembly as required.
4. Prepare components and tooling for assembly.	4.1. Jigs and fixtures are set up to ensure accuracy of component assembly. 4.2. Component alignment is checked for conformance to specifications prior to fastener hole generation. 4.3. Hole location/relocation is carried out in accordance

ELEMENT	PERFORMANCE CRITERIA
	with specification procedures and standard practices. 4.4. Standard practices are followed in hole generation sequencing to ensure that assembly stress defects are not built in. 4.5. Components are disassembled, cleaned, deburred and surface treatments are applied prior to final assembly.
5. Assemble aircraft structure or sub-assembly.	5.1. Sealants and/or adhesives are selected and applied in accordance with assembly specifications or appropriate documentation. 5.2. Components are positioned and secured with appropriate temporary fastening devices for accurate assembly. 5.3. Fasteners are selected and installed in accordance with assembly specifications or appropriate manuals.
6. Inspect completed assemblies.	6.1. Assembled components are inspected to confirm dimensional accuracy and specifications are met. 6.2. Checking or testing equipment is used where appropriate to ensure requirements are met. 6.3. Required documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to aircraft structure
- correctly interpreting repair scheme/modification drawings (including third angle projection, isometric, sectional formats) and procedural instructions/specifications
- correctly supporting the aircraft structure by jacking, trestling, bracing and/or jiggling methods
- identifying various aircraft metals/composite materials and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or

REQUIRED SKILLS AND KNOWLEDGE

- mechanical means
- handling and storing aircraft metals and composite materials to industry standards
- identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour
- using appropriate hand tools and machines to remove and assemble aircraft structural components, parts, sections and skin including riveting equipment, drilling equipment, aligning tools, reamers and material fasteners (grip pins)
- applying correct removal and installation techniques for general and close tolerance fasteners (rivets, standard and oversize - hilocks) including hole preparation and location techniques
- performing aircraft alignment and mensuration checks
- restoring aircraft structure surface finishes

Required knowledge

Look for evidence that confirms knowledge of:

- aircraft construction principles
- describing the basic construction methods used to assemble:
 - fuselage (pressure and non-pressurised)
 - wings, vertical and horizontal stabilisers, rotary wing tail cones and pylons
 - engine nacelles/pylons
 - doors and windows, including seals, sealants and locking mechanisms

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications, drawings and specifications and appropriate jigs, fixtures and tools to disassemble and reassemble aircraft structure while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements,

EVIDENCE GUIDE	
	standards and practices, and processes associated with assembly. Evidence of knowledge about repair techniques and the use of the standard repair manual in a range of different repair situations will be necessary to supplement evidence of ability to plan and undertake structure and component repair. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on elements from each of Groups 1 to 3 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment

RANGE STATEMENT	
	requirements included in the Evidence Guide.
Scope	The competency applies to: 1. Assembly of aircraft sub-assembly or end items from detailed parts using jigs and fixtures 2. Repair or modification of aircraft structure through specific repair schemes defined in structural repair manuals and other relevant documentation 3. Repair by replacement of major structural load carrying members, for example, skins, longerons, spars, frames, bulkheads.
Assembly procedures will include:	Assembly procedures will include: • drilling, reaming, counter-sinking • fitting of fasteners and rivets • application of adhesives and sealants • fitting of hardware • application of corrosion inhibitors and protective coatings Assembly stress defects can refer to: • oil canning, buckling, contour misalignment
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA405B Repair/modify aircraft composite material structure/components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance AME Certificate IV training pathway, and of the Mechanical AME Certificate IV training pathways. It covers the competencies required for the repair or modification of fixed and rotary wing aircraft structural components that are made from composite materials.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use maintenance publications, applicable materials, tools and methods to repair aircraft composite material structure and components. Applications include composite material structure and components from fixed and rotary wing aircraft either on-aircraft or in the workshop.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA401B	Inspect aircraft structures

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan repair/modification.	1.1.Extent of damage is correctly assessed to assist in determining repair procedure. 1.2.Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage. 1.3.Appropriate modification or repair scheme is identified in accordance with structural repair manual and/or approved data. 1.4.Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage criteria is out of limits. 1.5.All materials and equipment required are organised.
2. Prepare components for hot bonding.	2.1.Components are prepared in accordance with applicable process specification. 2.2.Bagging is checked to ensure vacuum seal is correct. 2.3.Temperature probes are placed appropriately to provide accurate measurement. 2.4.Equipment is checked for serviceability to ensure safety in application. 2.5.Heat blanket is laid on component or repair in a manner that ensures even temperature distribution.

ELEMENT	PERFORMANCE CRITERIA
3. Repair/modify components using hot bond.	3.1. Hot bonding equipment is operated in accordance with equipment manufacturer's procedures. 3.2. Vacuum and temperature recordings are monitored, including checking of hot and cold spots on trailing and leading temperature probes, to ensure specifications are met. 3.3. Curing cycle and recording of operating cycle data are monitored as required by approved procedures to ensure specifications are met. 3.4. Blemishes are sealed, potted or filled, where necessary, in accordance with applicable process specification. 3.5. Component assemblies, including test pieces, requiring further or special treatment are made ready for the appropriate processes. 3.6. Required maintenance documentation is accurately completed and correctly processed. 3.7. Completed assemblies are tagged, sealed or packaged as required.
4. Repair/modify components using cold cure.	4.1. Lay up of materials is checked to confirm that components meet required specifications. 4.2. Curing cycle is regularly monitored to ensure required specifications are met. 4.3. Components are checked for blemishes or delamination in accordance with quality procedures. 4.4. Component assemblies requiring further or special treatment are made ready for the appropriate processes. 4.5. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 4.6. Completed assemblies are tagged, sealed or packaged as required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE**Required skills**

Look for evidence that confirms skills in:

- Application of relevant OH&S procedures
- The use of approved maintenance documentation and aircraft publications relating to aircraft structure
- Identifying composite component applications in aircraft structures
- Identifying various aircraft composite materials/resins and their basic properties by interpretation of markings and visual means
- Handling and storing of composite materials to industry standards
- Assessing composite component damage using visual and tap test methods
- Performing composite component repairs using:
 - external patch repair
 - scarf repair
 - stepped repair
 - wet lay up repair
 - composite fastener hole repair
 - metal to metal and metal to composite bonding
- Correctly interpreting and /or producing repair scheme/modification drawings/sketches.
- Using appropriate hand tools and machines to disassemble and assemble aircraft composite components, parts, sections and skin including extraction/installation equipment, drilling/cutting equipment, and material fasteners

Required knowledge

Look for evidence that confirms knowledge of:

- Evidence of knowledge of aircraft construction principles
- Defining composite terminology
- Describing composite component construction methods including structural assembly fastener identification

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications, applicable materials, tools and methods to repair aircraft composite material structure and components while applying all relevant safety procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across the range of different material applications and curing requirements. It is essential that specific aspects of the laying up and curing process for aircraft composite materials are checked to ensure quality and safety standards are achieved in this area. Correct checking and wearing of safety protective clothing is critical, particularly in the hot bonding process. Evidence of knowledge about repair techniques and the use of the standard repair manual in a range of different repair situations will be necessary to supplement evidence of ability to plan and undertake component repair. Ability to apply different materials and curing cycles, including composite to composite and composite to metal components, will be necessary to indicate competency in preparing and curing composite materials. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision using materials from each of Groups 1 to 3 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Applicable materials and methods	Applicable materials/methods include: 1. Pre-preg materials hot cure (performed on one of carbon graphite, kevlar, fibreglass, or aluminium) 2. Cold cure or wet lay-up (using either fibreglass or carbon graphite) 3. Core materials (using one of aluminium, nomex, or foam)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to: industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA406B Repair/modify aircraft non-primary structural sheetmetal components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance Certificate II training pathway. It covers the competencies required to perform routine basic repairs and modifications, under qualified person guidance, on a range of aircraft non-primary structural sheetmetal components. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to repair aircraft non-primary structure sheetmetal components under the guidance of a qualified person. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to perform routine repairs and minor modifications to aircraft non-primary structural sheetmetal components	1.1. Applicable sheetmetal repair scheme is determined in accordance with applicable maintenance documentation, enterprise procedures and qualified person guidance. 1.2. All required materials and equipment are selected and organised in accordance with enterprise procedures and maintenance documentation.

ELEMENT	PERFORMANCE CRITERIA
2. Perform routine repairs and minor modifications to aircraft non-primary structural sheetmetal components	2.1. Sheetmetal repairs are performed in accordance with approved repair scheme, ensuring that aircraft standard practices are used and standard process requirements are carried out. 2.2. Work area is cleaned of all waste material or adjustments. 2.3. Under guidance of a qualified person, minor adjustments are made, where necessary, for components to operate within prescribed specifications.
3. Complete routine repair and minor modification activities	3.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures. 3.2. Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of enterprise procedures, approved maintenance documentation and aircraft publications relating to aircraft sheetmetal components
- identifying various aircraft metals used for sheetmetal components and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- handling and storing aircraft metals used for sheetmetal components, including sealing agents, to industry standards
- identifying aircraft sheetmetal assembly fasteners (metal and non-metallic) by interpretation of markings, numbering systems, size, shape and colour
- correctly interpreting, with expert qualified person guidance and in accordance with enterprise procedures, sheetmetal repair scheme/modification drawings and hand sketches
- using appropriate hand tools and machines under supervision to remove and assemble aircraft sheetmetal components

REQUIRED SKILLS AND KNOWLEDGE

- performing under guidance and in accordance with enterprise procedures a range of routine sheetmetal repair techniques, including metal scab patch repairs
- applying corrosion removal/treatment techniques
- restoring sealing and surface finishes

Required knowledge

Look for evidence that confirms a basic knowledge of aircraft sheetmetal component construction principles and repair techniques.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications under qualified person guidance to repair aircraft non-primary structure sheetmetal components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices, and processes associated with assembly.

Evidence of knowledge about enterprise procedures relating to basic repair techniques and the use of the standard repair manual/practices in a range of different routine repair situations will be necessary to supplement evidence of ability to plan and undertake component repair.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on at least one item from each of Groups 1 to 5 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and

EVIDENCE GUIDE	
	Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note:	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Sheetmetal repairs	<i>Sheetmetal repairs may include:</i> 1. Removing corrosion by chemical and mechanical methods 2. Restoring protective coatings 3. Freehand precision hole generation 4. Removing and installing fastening devices 5. Routine repairs to non-primary structural sheetmetal components
Work environment	Work is undertaken either autonomously or as part of a team and under the guidance of a qualified

RANGE STATEMENT	
	person. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure). All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.
Competency application	Competency applies to the routine repair and/or minor modification of aircraft non-primary structural sheetmetal components. Note that 'primary structure/structural' refers to all components of an aircraft, the failure of which would seriously endanger safety, for example, wing or tailplane spars, main fuselage frames, engine bearers, portions of skin that are highly stressed. 'Non-primary' refers to any other items. Note also that the scope of any modification and the procedure to be followed will be provided by the qualified person.
Scope	Repairs/modification undertaken are limited to the scope of skills and knowledge included in the Unit of Competency MEA109A.
Procedures and requirements	Refer to industry standard specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA407B Repair/modify aircraft non-primary structural non-metallic components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Structures Maintenance AQF2 training pathway. It covers the competencies required to perform routine basic repairs and modifications, under qualified person guidance, on a range of aircraft non-primary structural non-metallic components. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to repair aircraft non-primary structure non-metallic components under the guidance of a qualified person. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to perform routine repairs and minor modifications to aircraft non-primary structural non-metallic components.	1.1. Applicable non-metallic repair scheme is determined in accordance with applicable maintenance documentation, enterprise procedures and qualified person guidance. 1.2. All required materials and equipment are selected and organised in accordance with enterprise procedures and maintenance documentation.

ELEMENT	PERFORMANCE CRITERIA
2. Perform routine repairs and minor modifications to aircraft non-primary structural non-metallic components.	2.1. Work is performed in accordance with approved repair scheme, ensuring that aircraft standard practices are used and standard process requirements are carried out. 2.2. Work area is cleaned of all waste material or adjustments. 2.3. Under guidance of a qualified person, minor adjustments are made, where necessary, for components to operate within prescribed specifications.
3. Complete routine repair and minor modification activities.	3.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures. 3.2. Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of enterprise procedures, approved maintenance documentation and aircraft publications relating to aircraft non-primary structural non-metallic components
- identifying various aircraft non-primary structural non-metallic components and their basic properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- handling and storing aircraft non-metallic components, including sealing agents, to industry standards
- identifying aircraft assembly fasteners by interpretation of markings, numbering systems, size, shape and colour
- correctly interpreting, with expert guidance and in accordance with enterprise procedures, non-primary structural non-metallic repair scheme/modification drawings and hand sketches
- using appropriate hand tools and machines under guidance of a qualified person to remove and assemble aircraft non-metallic components

REQUIRED SKILLS AND KNOWLEDGE
- performing under guidance and in accordance with enterprise procedures a range of routine non-primary structural non-metallic repair techniques - restoring sealing and surface finishes
Required knowledge
Look for evidence that confirms a basic knowledge of aircraft non-metallic component construction principles and repair techniques.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications under qualified person guidance to repair aircraft non-primary structure non-metallic components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices, and processes associated with assembly. Evidence of knowledge about enterprise procedures relating to routine basic repair techniques and the use of the standard repair manual/practices in a range of situations will be necessary to supplement evidence of ability to plan and undertake component repair under qualified person guidance. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under qualified person guidance on a representative range of components in Group 2 using applicable materials from Group 1, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and

EVIDENCE GUIDE	
	Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Competency application	Competency applies to the use of applicable non-metallic materials for the routine repair and/or minor modification under guidance of a qualified person to non-primary structural non-metallic components, as follows: 1. Non-metallic materials can include fibreglass, sandwich honeycomb, nylon, perspex, nomex core materials, and matrix resins. 2. Components include interior trim panels (sidewalls, galleys, toilets, roof panels, floor panels), cargo lining, fairings and windows Note that 'primary structure/structural' refers to all

RANGE STATEMENT	
	components of an aircraft, the failure of which would seriously endanger safety, for example, wing or tailplane spars, main fuselage frames, engine bearers, portions of skin that are highly stressed. 'Non-primary' refers to any other items. Note that the scope of any modification and the procedure to be followed will be provided by the qualified person.
Work environment	Work is undertaken either autonomously or as part of a team and under the guidance of a qualified person. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure). Work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality.
Scope	Skills and knowledge applied to repairs are limited to those specified in the Unit of Competency MEA109A.
Procedures and requirements refer to:	Refer to industry standard specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA410B Maintain aircraft structure/components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways. It covers the competencies required to remove corrosion damage from the structure and structural components of fixed or rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen B1 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove corrosion from aircraft structural materials. Applications include the metallic structure of fixed and rotary wing aircraft and structural components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA401B	Inspect aircraft structures

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to remove corrosion damage	1.1.Extent of damage is correctly assessed to assist in determining removal procedure. 1.2.Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage. 1.3.Appropriate <i>corrosion removal procedure</i> is identified in accordance with structural repair manual and/or approved data. 1.4.Specialist advice is obtained in establishing an approved repair scheme where a standard corrosion removal procedure cannot be identified or damage criteria is out of limits 1.5.All materials and equipment required are organised.
2. Remove corrosion damage	2.1.Corrosion removal is performed and protective coatings, sealants and jointing compounds applied, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out. 2.2.Structure/component is cleaned of all waste material or contaminants. 2.3.Components are adjusted, where necessary, to operate within prescribed specifications. 2.4.Required maintenance/repair documentation is completed and processed in accordance with standard

ELEMENT	PERFORMANCE CRITERIA
	enterprise procedures. 2.5.Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying various aircraft metals and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- applying structural corrosion removal/treatment techniques
- restoring aircraft structure sealing and surface finishes

Required knowledge

Look for evidence that confirms knowledge of aircraft construction principles.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove corrosion damage from aircraft structural materials while applying all relevant safety precautions.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices and processes associated with assembly. Evidence of knowledge about repair techniques and the use of the standard repair manual in a range of different repair situations will be necessary to supplement evidence of ability to plan and undertake structure and component repair. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least one task from each of Groups 1 to 3 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Note	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Corrosion removal procedure	Corrosion removal procedure may include: 1. Removing corrosion by chemical and mechanical methods 2. Restoring protective coatings 3. Applying sealants and jointing compounds
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA411A Remove surface coatings from aircraft or aircraft components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to prepare aircraft and aircraft components for coating removal and remove the coatings. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to preparation and masking of aircraft and aircraft components for coating removal and the removal of coatings using chemical and mechanical methods. Applications include fixed and rotary wing aircraft and aircraft components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify the appropriate coating removal method	1.1. The coating removal task is identified from maintenance documentation and enterprise procedures. 1.2. Enterprise procedures and maintenance publications are used to identify materials and tools to be used for

ELEMENT	PERFORMANCE CRITERIA
	coating removal. 1.3. Aircraft or component identification is matched with relevant maintenance documentation.
2. Prepare for coating removal	2.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.2. Materials and tools required for coating removal are assembled. 2.3. Appropriate preparation for access to the aircraft is undertaken. 2.4. Masking requirements are determined using enterprise procedures and maintenance publications. 2.5. Masking is applied to relevant areas and sensitive components. 2.6. Environmental requirements are observed during the coating removal process
3. Remove coating	3.1. Chemical strippers are applied in accordance with relevant procedures. 3.2. Mechanical coating removal is performed in accordance with enterprise procedures and maintenance manuals. 3.3. Surfaces are cleaned of all chemical residue and mechanical media in accordance with enterprise procedures and maintenance manuals. 3.4. Masking materials are removed and final cleaning of surfaces is performed.
4. Clean up work area and maintain equipment	4.1. Material that can be reused is collected and correctly stored. 4.2. Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise procedures. 4.3. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 4.4. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 4.5. Tools are cleaned and maintained in accordance with enterprise procedures. 4.6. Work area is cleaned and inspected for serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to coating removal, including the selection and correct use of PPE
- selection and application of masking and barrier materials
- selection and use of chemical strippers
- use of Material Safety Data Sheets (MSDS)
- selection and use of applicable mechanical coating removal methods
- cleaning of surfaces following coating removal
- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures and maintenance publications
- OH&S procedures relating to the removal of aerospace coatings including PPE and fume extraction
- how to obtain MSDS
- types of chemicals used for coating removal and methods of application
- mechanical methods that can be used for coating removal
- types of masking and barrier materials
- cleaning methods following coating removal
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must

EVIDENCE GUIDE	
	be able to remove surface coatings from aircraft and aircraft components in accordance with specified procedures while using the correct PPE and observing all relevant safety precautions and environmental protection processes.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of coating removal tasks associated with aircraft and aircraft components. It is essential that system testing procedures, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret coating removal procedures and apply them in practice is critical. Evidence of transferability of skills and knowledge related to coating removal is essential. This is to be demonstrated through application of chemical and mechanical coating removal processes across a range of aircraft and component tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of coating removal tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • Defence regulations and instructions • standing instructions
Materials and tools	<i>Materials and tools may include:</i> • masking tapes and barrier materials • chemicals • abrasives • grinders • scrapers • paint stripper application pumps • blasting equipment • cleaning material
Environmental requirements	<i>Environmental requirements may relate to:</i> • noise • dust • fume extraction • clean-up management

RANGE STATEMENT**Legislative, regulatory and enterprise procedures**

Legislative, regulatory and enterprise procedures may include:

- State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials
- MSDS
- maintenance organisation manual
- procedures manual
- work instructions
- relevant defence regulations and instructions
- standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA412A Pre-treat aluminium alloy surfaces

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to pre-treat aircraft and aircraft component aluminium alloy surfaces prior to application of surface coatings. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the application of chemical conversion coatings to aluminium alloy surfaces of aircraft and aircraft components. Applications include fixed and rotary wing aircraft and aircraft components with aluminium alloy surfaces.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare surfaces for application of chemical conversion coating	1.1. The required pre-treatment task is identified from maintenance documentation and enterprise procedures. 1.2. Enterprise procedures and/or process specifications

ELEMENT	PERFORMANCE CRITERIA
	are used to identify required materials and tools. 1.3. Aircraft or component identification is matched with relevant maintenance documentation. 1.4. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 1.5. Common surface soils are removed in accordance with enterprise procedures and/or process specifications. 1.6. Masking is completed on areas where pre-treatment is not required. 1.7. Aluminium alloy substrate is prepared for application of conversion coating in accordance with enterprise procedures and/or process specifications.
2. Apply chemical conversion coating	2.1. The correct environment for conversion coating application is established and maintained. 2.2. The applicable chemical conversion coating is applied. 2.3. Masking is removed and the aircraft or component is left in a suitable condition for the next task. 2.4. Completion of the pre-treatment process is documented in accordance with enterprise procedures.
3. Clean up work area and maintain equipment	3.1. Material that can be reused is collected and correctly stored. 3.2. Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise procedures. 3.3. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 3.4. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 3.5. Tools are cleaned and maintained in accordance with enterprise procedures. 3.6. Work area is cleaned and inspected for serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to pre-treatment of aluminium alloy substrates, including the selection and correct use of PPE
- application of masking
- preparation for chemical conversion coating:
- water break test
- application of specified pre-treatment process
- water break re-test
- use of Material Safety Data Sheets (MSDS)
- selection and use of applicable chemical conversion coating
- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures and/or process specifications
- OH&S procedures relating to aluminium alloy pre-treatment processes including PPE
- how to obtain MSDS
- types of masking and barrier materials
- types of pre-treatment processes
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to pre-treat aluminium alloy surfaces in accordance with specified procedures while using the

EVIDENCE GUIDE	
	correct PPE and observing all relevant safety precautions and environmental protection processes.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of pre-treatment tasks associated with aircraft and aircraft component aluminium alloy surfaces. It is essential that applicable processes, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret pre-treatment procedures and apply them in practice is critical. Evidence of transferability of skills and knowledge related to pre-treatment is essential. This is to be demonstrated through application of conversion coatings to aluminium alloy surfaces across a range of aircraft and component tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of pre-treatment tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application of this unit may relate to:

Application of this unit may relate to:

- scheduled or unscheduled maintenance
- individual or team related activities

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

OH&S requirements

OH&S requirements are identified from relevant:

- State/Territory/Commonwealth OH&S legislation, regulations and codes
- procedures manual
- safety manual
- work instructions
- maintenance organisation manual
- MSDS
- Defence regulations and instructions
- standing instructions

Common surface soils

Common surface soils may include:

- paint
- dirt
- grease
- oils
- fuel
- adhesives

Legislative, regulatory and enterprise procedures

Legislative, regulatory and enterprise procedures may include:

- State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials
- MSDS
- maintenance organisation manual

RANGE STATEMENT

	• procedures manual • work instructions • relevant Defence regulations and instructions • standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA413A Seal aircraft and aircraft component structural seams

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to seal surface seams of aircraft and aircraft components prior to application of surface coatings. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the application of sealant to the surface seams of aircraft and aircraft components prior to surface coating application. Applications include fixed and rotary wing aircraft and aircraft components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake seam sealing	1.1. The seam sealing task is identified from maintenance documentation and enterprise procedures. 1.2. Applicable enterprise procedures, process specifications and maintenance publications are used to identify materials and tools to be used for seam sealing.

ELEMENT	PERFORMANCE CRITERIA
	1.3. Aircraft or component identification is matched with relevant maintenance documentation.
2. Prepare seams for application of sealant	2.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.2. Materials and tools required for sealant application are assembled. 2.3. Masking is applied in accordance with enterprise procedures and/or process specifications. 2.4. Seams are prepared for sealant application in accordance with enterprise procedures and/or process specifications.
3. Mix sealant	3.1. Environment is established in accordance with enterprise procedures and/or process specifications. 3.2. The applicable sealant is mixed in accordance with manufacturer's specifications.
4. Apply sealant to seams	4.1. Sealant is applied in accordance with enterprise procedures and/or process specifications. 4.2. The sealed seam is inspected and blemishes, voids or gaps are filled. 4.3. Masking materials are removed. 4.4. Waste and/or surplus materials are disposed of in accordance with legislative, regulatory and enterprise procedures. 4.5. Documentation is completed in accordance with standard enterprise procedures. 4.6. Aircraft or component, equipment and work area is left in a condition enabling the next task to begin.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to seam sealing, including the selection and correct use of PPE

REQUIRED SKILLS AND KNOWLEDGE

- selection and application of masking materials
- selection, mixing and application of applicable sealants
- use of Material Safety Data Sheets (MSDS)
- selection and use of applicable enterprise procedures and/or process specifications
- correct disposal of waste materials
- cleaning of work area and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures, process specifications and maintenance publications
- OH&S procedures relating to seam sealing including the selection and use of PPE
- how to obtain MSDS
- types of sealants used for seam sealing
- types of masking materials
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to seal surface seams of aircraft and aircraft components in accordance with specified procedures while using the correct PPE and observing all relevant safety precautions and environmental protection processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of seam sealing tasks associated with surface seams of aircraft and aircraft components. It is essential that applicable processes, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret seam sealing procedures and apply them in practice is critical.

EVIDENCE GUIDE	
	Evidence of transferability of skills and knowledge related to seam sealing is essential. This is to be demonstrated through application of sealant to surface seams across a range of aircraft and component tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of seam sealing tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities

RANGE STATEMENT	
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • standing instructions
Legislative, regulatory and enterprise procedures	<i>Legislative, regulatory and enterprise procedures may include:</i> • State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials • MSDS • maintenance organisation manual • procedures manual • work instructions • relevant Defence regulations and instructions • standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA414A Remove light corrosion from aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit covers the competencies required to remove light corrosion from the surfaces of aircraft structure. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the Unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the removal of light corrosion from the surfaces of aircraft structure. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify corrosion damage	1.1. <i>Signs of corrosion</i> are identified through visual inspection. 1.2. <i>The type of corrosion</i> is identified. 1.3. The severity of corrosion damage is determined and damage more severe than light surface corrosion is documented and reported in accordance with standard enterprise procedures.

ELEMENT	PERFORMANCE CRITERIA
2. Remove light corrosion	2.1. The applicable corrosion removal method is selected in accordance with enterprise procedures 2.2. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.3. Materials and tools required for corrosion removal are assembled. 2.4. Surface is prepared and corrosion removed using the selected removal method.
3. Clean area and equipment	3.1. Surface is cleaned of all chemical residue and mechanical media, in accordance with enterprise procedures, ready for the next process. 3.2. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 3.3. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 3.4. Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise procedures. 3.5. Documentation is completed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to light corrosion removal, including the selection and correct use of PPE
- recognition of types of corrosion and of damage that exceeds light surface corrosion
- application of enterprise procedures for removal of light corrosion
- selection and use of applicable corrosion removal methods, equipment and tools
- use of Material Safety Data Sheets (MSDS)
- cleaning of surfaces following corrosion removal

REQUIRED SKILLS AND KNOWLEDGE

- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures and maintenance publications
- OH&S procedures relating to the removal of aerospace coatings including PPE
- how to obtain MSDS
- types of chemicals used for corrosion removal and methods of application
- mechanical methods that can be used for corrosion removal
- cleaning methods following corrosion removal
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to remove light corrosion from the surfaces of aircraft structure in accordance with specified procedures while using the correct PPE and observing all relevant safety precautions and environmental protection processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of tasks involving the removal of light corrosion damage from the surfaces of aircraft structure. It is essential that applicable processes, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret corrosion removal procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to the removal of light corrosion is essential. This

EVIDENCE GUIDE	
	is to be demonstrated through corrosion removal using mechanical, manual and chemical means across a range of aircraft tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of light corrosion removal tasks using applicable mechanical, manual and chemical removal methods as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities

RANGE STATEMENT	
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Signs of corrosion	<i>Signs of corrosion may include:</i> • surface deformed • paint blistered or flaked • powder • discolouration
Types of corrosion	<i>The type of corrosion may be:</i> • uniform etch • pitting • intergranular • exfoliation • filiform • galvanic
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • Defence regulations and instructions • standing instructions
Materials and tools may include:	<i>Materials and tools may include</i> • micro grinder • sanders • plastic media blasting equipment • abrasive pads • wet/dry abrasive papers • chemicals • PPE applicable to task
Selected removal methods	<i>Selected removal methods may include:</i> • light mechanical using micro grinder, sander or plastic media blasting • manual removal using wet/dry abrasive papers

RANGE STATEMENT	
	or abrasive pads chemical
Legislative, regulatory and enterprise procedures	<i>Legislative, regulatory and enterprise procedures may include:</i> - State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials - MSDS - maintenance organisation manual - procedures manual - work instructions - relevant Defence regulations and instructions - standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA415A Paint aircraft surfaces

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit covers the competencies required to apply pain finishes to the surfaces of aircraft and aircraft components. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the Unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to final preparation of surfaces and application of paint finishes to aircraft and aircraft components. Applications include fixed and rotary wing aircraft and aircraft components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	AURV229749A	Prepare spray painting materials and equipment
	AURV329603DA	Apply air dry and polyurethane enamel refinishing materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for painting	1.1. The painting task is identified from maintenance documentation and enterprise procedures and type of substrate is identified. 1.2. Enterprise procedures and maintenance publications are used to identify required materials and tools and necessary items are assembled. 1.3. Aircraft or component identification is matched with relevant maintenance documentation. 1.4. Surfaces are prepared for application of paint in accordance with enterprise procedures and/or process specification. 1.5. Masking and barrier materials are applied as required by task.
2. Apply primer	2.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.2. Temperature and humidity requirements are complied with. 2.3. Specified primer is applied in accordance with enterprise procedures and/or process specification. 2.4. Reject paintwork is identified and rectified in accordance with enterprise procedures and/or process specification. 2.5. Equipment is cleaned.
3. Apply surface top coat	3.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 3.2. Temperature and humidity requirements are complied with. 3.3. The specified top coat material is prepared in accordance with manufacturer's instructions. 3.4. Top coat is applied in accordance with enterprise procedures and/or process specifications. 3.5. Reject paintwork is identified and rectified in accordance with enterprise procedures and/or process specifications. 3.6. Masking and barrier materials are removed and final finishing of the surface is completed as required. 3.7. Documentation is completed in accordance with standard enterprise procedures.

ELEMENT	PERFORMANCE CRITERIA
4. Clean up work area and maintain equipment	4.1. Waste material is removed and disposed of or stored in accordance with <i>legislative, regulatory and enterprise procedures.</i> 4.2. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 4.3. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 4.4. Tools are cleaned and maintained in accordance with enterprise procedures. 4.5. Work area is cleaned and inspected for serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to paint application, including the selection and correct use of PPE
- selection and application of masking and barrier materials
- identification, preparation and use of applicable primers and top coats
- use of Material Safety Data Sheets (MSDS)
- use of manufacturer specifications and directions
- selection and use of applicable paint application equipment
- preparation of surfaces for paint application
- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures, process specifications and maintenance publications
- OH&S procedures relating to the application of aerospace coatings including PPE and fume extraction
- how to obtain MSDS
- manufacturer specifications and directions

REQUIRED SKILLS AND KNOWLEDGE

- types of paint finishes and applicability to various substrates
- procedures for preparing surfaces for paint application
- types of masking and barrier materials
- methods used for final finishing of surfaces
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply paint finishes to the surfaces of aircraft and aircraft components in accordance with specified procedures while using the correct PPE and observing all relevant safety precautions and environmental protection processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of paint application tasks associated with aircraft and aircraft components. It is essential that system testing procedures, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret coating removal procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to application of paint finishes is essential. This is to be demonstrated through application of paint finishes across a range of aircraft and component substrate types. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine

EVIDENCE GUIDE	
	supervision on a representative range of paint finish application tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Type of substrate	<i>Type of substrate may be:</i> • high strength steel • aluminium alloys • composite fibre • plastic

RANGE STATEMENT	
	• transparencies • magnesium alloy • fabric • wood
Required materials and tools	<i>Required materials and tools may include:</i> • epoxy primers • lacquer primers • acrylic top coats • polyurethane top coats • chemicals • masking and barrier materials • low pressure gun or touch-up gun • general purpose suction feed spray guns • airless spray units • electrostatic spray equipment • sanding/polishing equipment and materials • PPE
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • Defence regulations and instructions • standing instructions
Legislative, regulatory and enterprise procedures	<i>Legislative, regulatory and enterprise procedures may include:</i> • State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials • MSDS • maintenance organisation manual • procedures manual • work instructions • relevant Defence regulations and instructions • standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA416A Apply aircraft identification markings, graphics and decals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit covers the competencies required to apply aircraft identification markings, graphics and decals. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the Unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to preparation and application of aircraft markings, graphics and decals. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity

Prerequisite units		
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret requirements and prepare materials for aircraft markings, graphics and decals	1.1. Requirements for <i>markings, graphics</i> and decals are determined from maintenance documentation, enterprise procedures and maintenance publications. 1.2. Equipment for task is identified and gathered. 1.3. Aircraft or component identification is matched with relevant maintenance documentation. 1.4. Decals are prepared and matched with

ELEMENT	PERFORMANCE CRITERIA
	documentation. 1.5. Markings or marking stencils are manufactured in accordance with drawings and specifications. 1.6. Graphics or graphic stencils are manufactured in accordance with drawings and specifications
2. Prepare for application of aircraft markings and graphics	2.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.2. Materials and equipment required for application of markings and graphics are assembled. 2.3. Surface on which marking or graphic will be applied is cleaned in accordance with enterprise procedures. 2.4. Marking or graphic position is accurately determined and masking is applied where necessary.
3. Apply aircraft markings, graphics and decals	3.1. Environmental requirements for the application of markings and graphics are established in accordance with enterprise procedures. 3.2. Markings and graphics are applied in accordance with enterprise procedures. 3.3. Rework, gloss measuring and thickness measuring are performed where applicable in accordance with enterprise procedures. 3.4. Masking materials are removed where applicable and final clean-up is performed as required. 3.5. Decal positions are accurately determined, surfaces cleaned and decals applied in accordance with enterprise procedures. 3.6. Documentation is completed in accordance with standard enterprise procedures.
4. Clean up work area and maintain equipment	4.1. Material that can be reused is collected and correctly stored. 4.2. Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise procedures. 4.3. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 4.4. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 4.5. Tools are cleaned and maintained in accordance with enterprise procedures.

ELEMENT	PERFORMANCE CRITERIA
	4.6. Work area is cleaned and inspected for serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to marking and graphic application including the selection and correct use of PPE
- the use of procedures, maintenance manuals and finishing scheme drawings to determine the requirements for markings, graphics and decals
- selection and application of masking and barrier materials
- manufacturing markings and graphics
- manufacturing stencils for the application of markings and graphics
- use of Material Safety Data Sheets (MSDS)
- cleaning of surfaces before and following the application of markings and graphics
- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures, maintenance publications, drawings and specifications
- manufacturer's specifications and directions
- OH&S procedures relating to the application of markings and graphics to aircraft including PPE and fume extraction
- how to obtain MSDS
- types of chemicals used for cleaning and surface preparation
- manufacturing methods for stencils
- types of masking and barrier materials
- cleaning methods following application of markings and graphics
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to manufacture and apply markings and graphics and apply decals to aircraft and aircraft in accordance with specified procedures and drawings while using the correct PPE and observing all relevant safety precautions and environmental protection processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of marking, graphic and decal application tasks associated with aircraft. It is essential that cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret drawing and specification requirements and application procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to the manufacture and application of markings and graphics is essential. This is to be demonstrated through application of various types of markings and graphics as listed in the Range Statement across a range of aircraft applications. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of marking and graphic application tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment

EVIDENCE GUIDE	
	would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Markings	<i>Markings may include:</i> • NATO • national or registration • safety
Graphics	<i>Graphics may include:</i> • organisational logos or emblems • decorative markings required by customer
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions

RANGE STATEMENT	
	standing instructions
Materials and equipment	<i>Materials and equipment may include:</i> - silk screen and/or frame - spray guns - vinyl plotter - screen burner - ink applicators - rollers - brushes - vinyl applicators - hazard tape - masking tape - mediums including paint, ink and vinyl - PPE
Application methods	<i>Application methods may include:</i> - oil board - vinyl (positive and negative) - screen printing - mask - stencil
Legislative, regulatory and enterprise procedures	<i>Legislative, regulatory and enterprise procedures may include:</i> - State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials - MSDS - maintenance organisation manual - procedures manual - work instructions - relevant Defence regulations and instructions - standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA417A Apply specialty coatings to aircraft

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit covers the competencies required to apply a range of specialty coatings to aircraft. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the Unit.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the preparation and application of a range of specialty coatings to aircraft using application methods applicable to the specific coating material. Applications include fixed and rotary wing aircraft and aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine specialty coating requirements	1.1. <i>Specialty coating</i> requirements are identified from maintenance documentation and enterprise procedures. 1.2. Enterprise procedures and maintenance publications are used to identify materials and tools to be used for specialty coating application.

ELEMENT	PERFORMANCE CRITERIA
	1.3. Aircraft or component identification is matched with relevant maintenance documentation.
2. Prepare surface for coating application	2.1. OH&S requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function. 2.2. Materials and equipment required for specialty coating application are assembled. 2.3. Surfaces are cleaned and degreased in accordance with enterprise procedures. 2.4. Final finishing of surfaces is performed in accordance with enterprise procedures and/or process specifications. 2.5. Reject parts and surfaces are identified, recorded and reported in accordance with standard enterprise procedures. 2.6. Masking is applied to relevant areas.
3. Prepare and apply coating	3.1. The required coating is prepared in accordance with manufacturer's specifications and directions. 3.2. Coating mix is inspected in accordance with enterprise procedures and/or process specifications. 3.3. Coating is applied to the required surfaces in accordance with enterprise procedures and/or process specifications. 3.4. Coating is inspected for coating thickness and quality compliance with enterprise procedures and/or process specifications. 3.5. Defects in the coating are identified and rectified as required. 3.6. Masking materials are removed and final cleaning of surfaces is performed. 3.7. Documentation is completed in accordance with standard enterprise procedures.
4. Clean up work area and maintain equipment	4.1. Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise procedures. 4.2. Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions. 4.3. Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures. 4.4. Tools are cleaned and maintained in accordance with

ELEMENT	PERFORMANCE CRITERIA
	enterprise procedures. 4.5. Work area is cleaned and inspected for serviceable condition.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of OH&S procedures relating to specialty coating application, including the selection and correct use of PPE
- use of procedures, process specification and manufacturer's data to identify coating preparation and application requirements
- selection and application of masking materials
- selection and use of correct specialty coating
- use of Material Safety Data Sheets (MSDS)
- selection and use of applicable coating application methods
- cleaning and preparation of surfaces for coating application
- correct disposal of waste materials
- cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures and maintenance publications
- OH&S procedures relating to the application of specialty aerospace coatings including PPE
- relevant data from manufacturers of specialty coatings
- how to obtain MSDS
- criticality of areas of aircraft structure with regard to coating application
- cleaning processes and chemicals used to prepare surfaces for coating application
- coating application methods
- masking materials
- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to correctly apply a range of aerospace specialty coatings to aircraft surfaces in accordance with specified procedures and drawings while using the correct PPE and observing all relevant safety precautions and environmental protection processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of specialty coating application tasks associated with aircraft. It is essential that cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret drawing and specification requirements and application procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to the application of a range of specialty coatings is essential. This is to be demonstrated through application of various types of specialty coating as listed in the Range Statement across a range of aircraft applications. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a minimum of two types of specialty coating on at least three application tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment

EVIDENCE GUIDE	
	would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
Specialty coatings	<i>Specialty coatings may include:</i> • specialised inner layer coatings • engine coatings • leading edge coatings • radome coatings • waterborne heatproof paints • walkway compounds • fuel tank coatings • heatproof coatings • electrical conductive coatings
OH&S requirements	<i>OH&S requirements are identified from relevant:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • procedures manual

RANGE STATEMENT	
	• safety manual • work instructions • maintenance organisation manual • MSDS • Defence regulations and instructions • standing instructions
Materials and equipment	<i>Materials and equipment may include:</i> • chemicals • cleaning materials • specialty coating material • various spray guns • brush • roller • trowel • PPE • baking oven • heat lamps • electrical test equipment • wet film thickness gauges
Defects in the coating	<i>Defects in the coating may include:</i> • sags • runs • delamination • imperfections • dry spray • contamination • over-spray • egress
Legislative, regulatory and enterprise procedures	<i>Legislative, regulatory and enterprise procedures may include:</i> • State/Territory/Commonwealth environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials • MSDS • maintenance organisation manual • procedures manual • work instructions • relevant Defence regulations and instructions • standing instructions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA418A Perform basic repair of aircraft internal fittings during line maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies required to repair aircraft internal fittings that are within the privileges of the Aircraft Maintenance Engineer A Licence. It is one of the units required for the granting of the chosen Aircraft Maintenance Engineer A Licence under CASR Part 66, in accordance with the licensing provisions in Section 3 Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to repair aircraft internal fittings such as internal doors that are not part of the pressure hull, overhead storage compartments and doors and cabin furnishing items that are manufactured from either sheet metal or non-metallic materials. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to perform routine repairs and minor modifications to aircraft internal fittings	1.1. Applicable repair scheme is determined in accordance with applicable maintenance publications and enterprise procedures. 1.2. All required materials and equipment are selected and organised in accordance with enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures and maintenance publications.
2. Perform routine repairs to aircraft internal fittings	2.1. Sheet metal repairs and non-metallic material repairs are performed in accordance with approved repair scheme, ensuring that aircraft standard practices are used and standard process requirements are carried out. 2.2. Work area is cleaned of all waste material. 2.3. Adjustments are made, where necessary, for components to operate within prescribed specifications.
3. Complete routine repair activities.	3.1. Required documentation is accurately completed and correctly processed in accordance with enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- application of relevant OH&S procedures
- the use of enterprise procedures, approved maintenance documentation and aircraft publications relating to aircraft sheet metal and non-metallic internal fittings
- identifying various materials used for internal fittings and their basic properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- handling and storing aircraft metals used for sheet metal internal fittings, including sealing agents, to industry standards
- identifying aircraft sheet metal assembly fasteners (metal and non-metallic) by interpretation of markings, numbering systems, size, shape and colour
- correctly interpreting applicable repair schemes and hand sketches
- using appropriate hand tools and power tools under supervision to remove and assemble aircraft sheet metal internal fittings
- performing under guidance and in accordance with enterprise procedures a range of routine metal and non-metal repair techniques
- applying corrosion removal/treatment techniques
- restoring sealing and surface finishes to repaired areas

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Look for evidence that confirms knowledge of relevant OH&S procedures and a basic knowledge of:

- aircraft sheet metal component construction principles and repair techniques
- aircraft non-metallic component construction principles and repair techniques

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to repair aircraft internal fittings made from sheet metal and non-metallic materials while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices, and processes associated with repair and assembly.

Evidence of knowledge about enterprise procedures relating to basic repair techniques and the use of the standard repair manual/practices in a range of different routine repair situations will be necessary to supplement evidence of ability to plan and undertake internal fitting repairs.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under supervision but without intervention on a representative range of tasks involving Groups 1 to 9 listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

EVIDENCE GUIDE	
Context of and specific resources for assessment	Competency should be assessed in the work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note:	The Range Statements below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Repairs	<i>Sheet metal repairs may include:</i> 1. Removing corrosion by chemical and mechanical methods 2. Restoring protective coatings to repaired areas 3. Freehand precision hole generation 4. Removing and installing fastening devices 5. Routine repairs to sheet metal internal fittings <i>Non-metallic material repairs may include:</i> 6. Repairs to fibreglass, sandwich honeycomb, nylon, perspex, nomex core materials, and matrix resins 7. Restoring protective coatings to repaired areas

RANGE STATEMENT	
	8. Freehand precision hole generation 9. Removing and installing fastening devices
Application of this unit may relate to:	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • repair of metallic or non-metallic interior fittings including interior trim panels (sidewalls, galleys, toilets, roof panels, floor panels), overhead lockers, cargo lining and internal doors that are not part of the aircraft pressure hull.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA419A Inspect and repair_modify aircraft cabin_cockpit non-primary structure components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to inspect for damage and perform routine basic repairs and modifications on a range of aircraft non-primary structural metallic and non-metallic components located in aircraft cabins and cockpits. No licensing requirements apply to this unit at the time of publication

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to inspect for damage and repair aircraft non-primary structure metallic and non-metallic components of aircraft cabins and cockpits. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation

Prerequisite units		
		maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect for damage to aircraft cabin/cockpit non-primary structure metallic and non-metallic components	1.1. <i>Metallic and/or non-metallic components</i> are visually inspected for damage. 1.2. Extent of damage is determined and confirmed to be within repair limits.

ELEMENT	PERFORMANCE CRITERIA
2. Prepare to perform routine repairs and minor modifications to aircraft cabin/cockpit non-primary structure metallic and non-metallic components.	2.1. Applicable metallic or non-metallic repair scheme is determined in accordance with applicable maintenance documentation and standard enterprise procedures. 2.2. Modification instructions are obtained in accordance with standard enterprise procedures. 2.3. All required materials and equipment are selected and organised in accordance with enterprise procedures and maintenance documentation
3. Perform routine repairs and minor modifications to aircraft cabin/cockpit non-primary structure metallic components.	3.1. Metallic component repairs and minor modifications are performed in accordance with approved repair scheme or modification instructions, ensuring that aircraft standard practices are used and standard process requirements are carried out. 3.2. Work area is cleaned of all waste material. 3.3. Minor adjustments are made, where necessary, for components to operate within prescribed specifications.
4. Perform routine repairs and minor modifications to aircraft cabin/cockpit non-primary structure non-metallic components.	4.1. Non-metallic component repairs and minor modifications are performed in accordance with approved repair scheme or modification instructions, ensuring that aircraft standard practices are used and standard process requirements are carried out. 4.2. Work area is cleaned of all waste material. 4.3. Minor adjustments are made, where necessary, for components to operate within prescribed specifications.
5. Complete routine repair and minor modification activities.	5.1. Required documentation is accurately completed and correctly processed in accordance with standard enterprise procedures. 5.2. Repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures, where required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices, including the use of Material Safety Data Sheets (MSDS) and the selection and use of applicable items of personal protective equipment (PPE)
- The use of enterprise procedures, approved maintenance documentation and aircraft publications relating to cabin/cockpit non-primary structure metallic and non-metallic components
- Identifying aircraft cabin/cockpit non-primary structure components and their basic properties by interpretation of markings, numbering systems or visual, chemical or mechanical means
- Handling and storing aircraft metallic and non-metallic components, including sealing agents, to industry standards
- Identifying aircraft assembly fasteners by interpretation of markings, numbering systems, size, shape and colour
- Visually inspecting metallic and non-metallic components for damage
- Correctly interpreting, in accordance with enterprise procedures, applicable repair scheme/modification drawings and hand sketches
- Using appropriate hand tools and machines to remove and assemble aircraft cabin/cockpit non-primary structure metallic and non-metallic components
- Performing, in accordance with enterprise procedures, a range of routine non-primary structure sheetmetal repair techniques, including metal scab patch repairs
- Performing, in accordance with enterprise procedures, a range of routine non-primary structure non-metallic repair techniques
- Applying corrosion removal/treatment techniques
- Restoring sealing and surface finishes

Required knowledge

Look for evidence that confirms knowledge of:

- Applicable OHS procedures, including how to obtain MSDS
- Selection and use of applicable items of PPE
- Construction methods used and assessment of common defects in aircraft crew and passenger seats, and in interior trim panels including sidewalls, galleys, furnishings and partitions, passenger modules/pods, toilets, roof panels, overhead luggage stowage bins, non-structural floor panels and cargo compartment lining
- Types of deterioration and damage
- Inspection methods
- Identification and interpretation of metallic and non-metallic repair schemes applicable to cabin/cockpit non-primary structural components
- The various forms of corrosion

REQUIRED SKILLS AND KNOWLEDGE

- The terms associated with composite materials
- Requirements for handling and storing aircraft metals and composite materials including sealing agents, to industry standards
- Means of identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to inspect and repair aircraft cabin/cockpit non-primary structure metallic and non-metallic components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that procedures take into account all safety precautions and quality requirements, standards and practices, and processes associated with assembly.

Evidence of knowledge about enterprise procedures relating to routine basic repair techniques and the use of the standard repair manual/practices in a range of situations will be necessary to supplement evidence of ability to plan and undertake component repair.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved on a representative range of components, inspecting for damage and performing repair tasks listed in Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the work environment

EVIDENCE GUIDE	
assessment	or simulated work environment, using tools and equipment specified by aircraft maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Metallic and non-metallic component repair	<i>Metallic and/or non-metallic components may include:</i> Aircraft crew and passenger seats, interior trim panels including sidewalls, galleys, furnishings and partitions, passenger modules/pods, toilets, roof panels, overhead luggage stowage bins, non-structural floor panels and cargo compartment lining <i>Types of damage may include:</i> • Corrosion, cracking and impact damage to metallic components • Delamination, cracking and impact damage to non-metallic components <i>Metallic component repairs may include:</i> 1. Removing corrosion by chemical and

RANGE STATEMENT	
	mechanical methods 2. Restoring protective coatings 3. Freehand precision hole generation 4. Removing and installing fastening devices 5. Fitting patches to cabin/cockpit non-primary structure sheetmetal components <i>Non-metallic component repairs may include:</i> 6. Composite patch, scarf and stepped repairs using fibreglass, sandwich honeycomb, nylon, perspex, nomex core materials, and matrix resins.
Primary structure	All components of an aircraft, the failure of which would seriously endanger safety. In the fuselage this includes frames, longerons and stringers, structural floor panels and all additional parts of the pressure hull such as skin, windows, doors and bulkheads.
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA501A Maintain and fit anti-G suits

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and fit an Anti-G suit. Maintenance involves inspecting, testing, isolating faults, replacing parts, repairing and cleaning, while fitting involves adjusting the Anti-G suit to fit an individual. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUAEFLS001A Maintain and fit Anti-G suits.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and fitment of Anti-G suits worn by aircrew and passengers in high performance aircraft. Maintenance involves inspection, testing, fault diagnosis, replacement of parts, repairs to fabric and cleaning. Fitment involves adjusting the Anti-G suit to correctly fit an individual. The scope of repairs excludes inflatable components of the Anti-G suit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA511A	Operate and maintain sewing machines and overlockers
	LMFSF2002B	Machine sew materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain Anti-G suit	1.1. Anti-G suit is inspected for serviceability in accordance with standard procedures. 1.2. Anti-G suit is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.3. Identified faults beyond own authority to rectify are reported to supervisor and faulty Anti-G suit is quarantined. 1.4. Unserviceable parts of the Anti-G suit are replaced and fabric repairs are completed in accordance with standards procedures. 1.5. Anti-G suit is cleaned in accordance with standard procedures 1.6. Anti-G suit is presented for inspection by supervisor in accordance with standard procedures. 1.7. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Fit Anti-G suit	2.1. Fitting process is explained to the participant so that optimal fit can be achieved. 2.2. Participant is measured and appropriate size Anti-G suit is selected. 2.3. Anti-G suit is adjusted to optimise fit in conjunction with participant feedback. 2.4. Anti-G suit fit is verified by the supervisor. 2.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to Anti-G suit maintenance processes, including the selection and correct use of PPE where applicable
- Use of Material Safety Data Sheets (MSDS)
- The use of applicable tools and maintenance documentation to:
 - test/inspect Anti-G suits for serviceability
 - replace unserviceable components and repair fabric in accordance with approved procedures including sewing
 - select and use appropriate Anti-G suit cleaning materials
 - correctly fit Anti-G suits to users
- Tying of knots including:
 - reef knot
 - bowline
 - thumb knot
 - daisy chain
 - half hitch
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant enterprise procedures and maintenance publications
- OHS procedures relating to Anti-G suit maintenance including the selection and use of PPE
- How to obtain MSDS
- G forces and Anti-G suit operation during flight
- Physiological effects of flight
- Critical nature of maintaining and fitting Anti-G suits
- Forces of ejection
- Operation of testing and measuring equipment and tools used to maintain Anti-G suits
- Inflation methods used in the maintenance of Anti-G suits
- Types of corrosion and contamination that may affect Anti-G suits
- Modification requirements for Anti-G suits
- Anti-G suit repair procedures and limitations
- Lacing techniques used in the fitting of Anti-G suits
- Anti-G suit cleaning methods and materials
- Handling, storage and transit procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and fit Anti-G suits while using the correct PPE and observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that Anti-G suit testing and inspection procedures, cleanliness requirements and safety precautions, including the correct use of PPE, are fully observed, understood and complied with. Ability to interpret maintenance and fitting procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to Anti-G suit maintenance and fitting is essential. This is to be demonstrated through demonstration of the ability to recognise faults and damage and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct fitting procedures on different sized individuals. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of maintenance tasks and on the correct fitting of Anti-G suits to at least three different sized individuals. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and

EVIDENCE GUIDE	
	special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • standing instructions
Typical faults	<i>Faults may include:</i> • broken zips and stitching • contamination • corrosion of metal parts such as zippers • damaged hardware • excessive wear • incorrect manufacture

RANGE STATEMENT	
	- leaks - tears
Anti-G suit replaceable parts	<i>Parts of the Anti-G suit may include:</i> - eyelets - press studs - zips
Adjustment of fit	<i>Adjustment of the Anti-G suit may be effected by:</i> - lacing of torso and legs - waist extension/reduction
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance activities - individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA502A Maintain and fit helmets

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and fit helmets that are capable of housing communications equipment. Maintenance involves inspecting, testing, isolating faults, replacing parts and sending away for repair, cleaning and testing prior to placing the item back in service. Fitting a helmet includes adjusting the helmet to fit the individual (helmets are not an off-the-shelf issue). No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS002A Maintain and fit helmets.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and fitment of helmets worn by aircrew and passengers. Maintenance involves inspection, testing, fault diagnosis, replacement of parts, cleaning and functional testing. Fitment involves adjusting the helmet to correctly fit an individual. Maintaining and fitting ancillary helmet equipment such as illumination systems, night vision equipment and oxygen masks is not part of this Unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Maintain helmet	1.1. Helmet is inspected for serviceability in accordance with standard procedures. 1.2. Helmet is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.3. Identified faults beyond own authority to rectify are reported to supervisor and faulty helmet is quarantined. 1.4. Unserviceable parts of the helmet are replaced in accordance with standards procedures. 1.5. Communication system components are tested in accordance with standard procedures 1.6. Helmet is cleaned in accordance with standard procedures 1.7. Helmet is presented for inspection by supervisor in accordance with standard procedures. 1.8. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Fit helmet	2.1. Fitting process is explained to the participant so that optimal fit can be achieved through relevant feedback. 2.2. Participant is measured to select an appropriate size helmet. 2.3. Components of helmet are adjusted to optimise fit. 2.4. Helmet fit is verified through participant feedback and by the supervisor. 2.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to helmet

REQUIRED SKILLS AND KNOWLEDGE

- maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable
- Use of Material Safety Data Sheets (MSDS)
 - The use of applicable tools and maintenance documentation to:
 - solder helmet electronic/electrical components
 - test the operation of helmet electronic/electrical components
 - replace unserviceable components in accordance with approved procedures including hand sewing, the use of hazardous chemicals and adhesives and thermal oven operation
 - select and use appropriate helmet cleaning materials
 - correctly fit helmets to users
 - Tying of knots including:
 - reef knot
 - bowline
 - thumb knot
 - half hitch
 - Cleaning and maintenance of equipment and tools
 - Correct disposal of hazardous waste

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant enterprise procedures and maintenance publications
- OHS procedures relating to helmet maintenance including the selection and use of PPE
- How to obtain MSDS
- Components of a helmet and their function
- Helmet operation in relation to flight
- Physiological effects of flight
- Aircraft crash dynamics
- Critical nature of maintaining and fitting helmets
- Need to regularly assess correct fitment of helmets
- Helmet fitting procedures
- G forces
- Forces of ejection
- Basic electrical principles
- Environmental conditions that may affect helmets
- Approved cleaning methods for aviation life support equipment
- Handling , storage and transit procedures relating to life support equipment
- Types of corrosion and contamination that may affect helmets
- Modification requirements for helmets

REQUIRED SKILLS AND KNOWLEDGE

- Helmet repair procedures and limitations
- Soldering techniques
- Operation of testing and measuring equipment and relevant specialist tools including thermal oven operation
- Use and storage of adhesives

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and fit helmets while using the correct PPE and observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that helmet testing and inspection procedures, cleanliness requirements and safety precautions, including the correct use of PPE, are fully observed, understood and complied with. Ability to interpret maintenance and fitting procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to helmet maintenance and fitting is essential. This is to be demonstrated through demonstration of the ability to recognise faults and damage and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct fitting procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on at least three unserviceable helmets providing a representative range of maintenance tasks and on the correct fitting of helmets to at least three

EVIDENCE GUIDE	
	individuals. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • standing instructions

RANGE STATEMENT	
Faults	<i>Faults may include:</i> • contamination • corrosion • cracks • delamination • fraying • incorrect manufacture • intermittent communication • scores/scratches
Replaceable parts	<i>Parts of the helmet may include:</i> • comfort pads • ear cup • ear cup pads • liner • retention straps • visor
Communication system components	<i>Communication system components may include:</i> • earphones • microphone • electric cables • switches
Components adjusted for fitment	<i>Components may include:</i> • communications system (e.g. ear cup and microphone where fitted) • comfort system (e.g. pads) • retention system (e.g. strap) • sizing system (e.g. liner) • visor system
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment
	MEA240B	Use electrical test equipment to perform basic electrical tests

MEA503A Maintain and fit immersion suits

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and fit immersion suits. Maintenance involves inspecting, testing, isolating faults, replacing or sending away for repair, cleaning and packing prior to placing the item back into service. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS003A Maintain and fit immersion suits.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and fitment of immersion suits. Maintenance involves inspection, testing, fault diagnosis, replacement of parts and cleaning. Fitment involves adjusting the immersion suit to correctly fit an individual. There are two types of immersion suits: quick don and constant wear. Quick don usually does not require fitting while constant wear is custom fitted to the individual.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	LMTTF2008A	Use adhesives

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain immersion suit	1.1. Immersion suit is inspected for serviceability in accordance with standard procedures. 1.2. Immersion suit is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.3. Identified faults beyond own authority to rectify are reported to supervisor and faulty immersion suit is quarantined. 1.4. Unserviceable parts of the immersion suit are replaced. 1.5. Immersion suit is cleaned in accordance with standard procedures 1.6. Immersion suit is re-packed in accordance with standard procedures. 1.7. Immersion suit is presented for inspection by supervisor in accordance with standard procedures. 1.8. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Fit immersion suit	2.1. Fitting process is explained to the participant so that optimal fit can be achieved. 2.2. Participant is measured and appropriate size immersion suit is selected. 2.3. Immersion suit is adjusted to optimise fit in conjunction with participant feedback. 2.4. Immersion suit fit is verified by the supervisor. 2.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to

REQUIRED SKILLS AND KNOWLEDGE

- immersion suit maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable
- Use of Material Safety Data Sheets (MSDS)
 - The use of applicable tools and maintenance documentation to:
 - test/inspect immersion suits for serviceability
 - replace unserviceable components in accordance with approved procedures including the use of hazardous materials and adhesives
 - select and use appropriate immersion suit cleaning materials
 - correctly fit immersion suits to users
 - Operating specialist equipment including:
 - heat press
 - vacuum heat sealer
 - 3 stage in-line breathing apparatus
 - filter extraction systems
 - spill kits
 - Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to immersion suit maintenance including the selection and use of PPE
- How to obtain MSDS
- Emergency procedures in relation to chemical spills and emergency evacuation of personnel in distress
- Chemical disposal procedures
- Requirements for storage of adhesives
- Cold shock and hypothermia in relation to survival
- Priorities of survival and how they relate to immersion suits and associated ancillary equipment
- Physiological effects of flight
- Critical nature of maintaining and fitting immersion suits
- Materials used to manufacture immersion suits (i.e. neoprene and gortex)
- Operation of testing and measuring equipment and tools used to maintain immersion suits
- Components of an immersion suit and their function
- Types of corrosion and contamination that may affect immersion suits
- Modification requirements for immersion suits
- Immersion suit repair procedures and limitations

REQUIRED SKILLS AND KNOWLEDGE

- Immersion suit cleaning methods and materials
- Handling, storage and transit procedures relating to life support equipment
- Handling and storage procedures relating to immersion suits (i.e. MACPAC highly susceptible to damage)
- Specialist equipment operation including:
 - heat press
 - vacuum heat sealer
 - 3 stage in-line breathing apparatus
 - filter extraction systems
 - spill kits

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and fit immersion suits while using the correct PPE and observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that immersion suit testing and inspection procedures, cleanliness requirements and safety precautions, including the correct use of PPE, are fully observed, understood and complied with. Ability to interpret maintenance and fitting procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to immersion suit maintenance and fitting is essential. This is to be demonstrated through demonstration of the ability to recognise faults and damage and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct fitting procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and

EVIDENCE GUIDE	
	regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on a representative range of maintenance tasks and on the correct fitting of immersion suits. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual

RANGE STATEMENT	
	• maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • standing instructions
Faults	<i>Faults may include:</i> • contamination • corrosion of metal parts such as zippers • delamination • incorrect manufacture • leaks • lifting of tapes • scuffing (e.g. boot) • tears in suit and/or seals
Parts of the immersion suit	<i>Parts of the immersion suit may include:</i> • boots • gloves • life line • light • seals (e.g. wrist, neck) • whistle
Adjustment of the immersion suit	<i>Adjustment of the immersion suit may include:</i> • leg length • sleeve length • trimming seals
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA504A Maintain and fit oxygen masks

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and fit oxygen masks worn by aviation aircrew. Maintenance involves inspecting, testing, isolating faults, replacing parts, cleaning and testing prior to placing the item back in service. Fitting an oxygen mask includes adjusting the mask to fit the individual (oxygen masks are not an off-the-shelf issue). No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS004A Maintain and fit oxygen masks.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and fitment of oxygen masks worn by aircrew. Maintenance involves inspection, testing, fault diagnosis, replacement of parts, cleaning and functional testing. Fitment involves adjusting the oxygen mask to correctly fit an individual.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain oxygen	1.1.Oxygen mask is inspected for serviceability in

ELEMENT	PERFORMANCE CRITERIA
mask	accordance with standard procedures. 1.2. Oxygen mask is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.3. Identified faults beyond own authority to rectify are reported to supervisor and faulty oxygen mask is quarantined. 1.4. Unserviceable parts of the oxygen mask are replaced in accordance with standards procedures. 1.5. Communication system components are tested in accordance with standard procedures 1.6. Oxygen mask is cleaned in accordance with standard procedures 1.7. Oxygen mask is presented for inspection by supervisor in accordance with standard procedures. 1.8. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Fit oxygen mask	2.1. Fitting process is explained to the participant so that optimal fit can be achieved through relevant feedback. 2.2. Participant is measured to select an appropriate size oxygen mask. 2.3. Components of oxygen mask are adjusted to optimise fit. 2.4. Integration of the oxygen mask and helmet is confirmed for correct function during operations. 2.5. Oxygen mask fit is verified through participant feedback and by the supervisor. 2.6. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to oxygen mask maintenance processes
- Use of Material Safety Data Sheets (MSDS)
- The use of applicable tools, testing/measuring equipment and maintenance documentation to:
 - solder oxygen mask electronic/electrical components
 - test the operation of helmet electronic/electrical components
 - replace unserviceable components in accordance with approved procedures
 - select and use appropriate oxygen mask cleaning materials
 - correctly fit oxygen masks to users
- Safely use the oxygen test rig
- Cleaning and maintenance of equipment and tools
- Correct disposal of hazardous waste

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant enterprise procedures and maintenance publications
- OHS procedures relating to oxygen mask maintenance
- How to obtain MSDS
- Safety precautions relating to oxygen and the operation of the oxygen test rig
- Requirements for an oxygen mask servicing facility
- Oxygen in flight
- Components of an oxygen mask and their function
- Oxygen mask operation in relation to flight
- Oxygen regulator operation
- Physiological effects of flight
- Hypoxia
- Critical nature of maintaining and fitting oxygen masks
- Need to regularly assess correct fitment of oxygen masks
- Oxygen mask fitting procedures
- Fitting procedures relating to the fitment of oxygen masks to helmets
- G forces
- Forces of ejection
- Basic electrical principles
- Environmental conditions that may affect oxygen equipment
- Approved cleaning methods for aviation life support equipment
- Handling , storage and transit procedures relating to life support equipment
- Handling and storage procedures for oxygen masks

REQUIRED SKILLS AND KNOWLEDGE

- Types of corrosion and contamination that may affect oxygen masks
- Modification requirements for oxygen masks
- Oxygen mask repair procedures and limitations
- Soldering techniques
- Operation of testing and measuring equipment and tools used to maintain oxygen masks
- Use and storage of adhesives

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and fit oxygen masks while observing all relevant safety precautions, especially those relating to oxygen.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that oxygen mask testing and inspection procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret maintenance and fitting procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to oxygen mask maintenance and fitting is essential. This is to be demonstrated through demonstration of the ability to recognise faults and damage and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct fitting procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of

EVIDENCE GUIDE	
	Competency are being achieved under routine supervision on at least three unserviceable oxygen masks providing a representative range of maintenance tasks and on the correct fitting of oxygen masks to at least three individuals. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions

RANGE STATEMENT	
	• maintenance organisation manual • MSDS • defence regulations and instructions • standing instructions
Faults	• <i>Faults may include:</i> • contamination • corrosion • cracks • excessive wearing • fraying • incorrect manufacture • intermittent communication • leaks • perishing
Parts of the oxygen mask	<i>Parts of the oxygen mask may include:</i> • communication system (e.g. microphone) • delivery tube • exo-skeleton (e.g. outer shell) • face piece (e.g. may include trimming) • retention system (e.g. strap) • valves
Communication system components	<i>Communication system components may include:</i> • microphone • electric cables • switches
Adjustable components:	<i>Components may include:</i> • retention system (e.g. strap) • seals
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment
	MEA240B	Use electrical test equipment to perform basic electrical tests

MEA505A Maintain and pack parachutes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and pack parachutes. Maintenance includes inspecting, testing, isolating faults, replacing components, repairing and cleaning prior to packing. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS005A Maintain and pack parachutes.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and packing of parachutes. Maintenance involves inspection, testing, fault diagnosis, replacement of parts, completion of repairs and cleaning. The unit applies to person carrying parachutes including emergency and ejection parachutes. It also applies to ballistic parachutes used for the recovery of light aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA511A	Operate and maintain sewing machines and overlockers
	LMFSF2002B	Machine sew materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain parachute	1.1.Parachute is inspected for serviceability in accordance with standard procedures. 1.2.Parachute is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.3.Identified faults beyond own authority to rectify are reported to supervisor and faulty parachute is quarantined. 1.4.Unserviceable parts of the parachute are replaced to render parachute serviceable in accordance with standard procedures. 1.5.Basic parachute repairs are completed in accordance with standard procedures. 1.6.Parachute is cleaned in accordance with standard procedures 1.7.Parachute is presented for inspection by supervisor in accordance with standard procedures. 1.8.Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Pack parachute	2.1.Parachute is packed for use in accordance with standard procedures. 2.2.Parachute is presented for inspection by supervisor in accordance with standard enterprise procedures. 2.3.Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to parachute maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable

REQUIRED SKILLS AND KNOWLEDGE

- Handling, storing and organising transport of equipment
- Delivering briefings to personnel in relation to operating parachutes
- Use of Material Safety Data Sheets (MSDS)
- Use of maintenance publications, drawings and documentation relating to parachute maintenance
- The use of applicable testing and measuring equipment, tools and maintenance documentation to:
 - test parachutes for serviceability
 - replace unserviceable components in accordance with approved procedures
 - select and use appropriate parachute cleaning materials
 - repair parachutes (both hand and machine sewing)
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to parachute maintenance including the selection and use of PPE
- How to obtain MSDS
- Critical nature of maintaining and packing parachutes, i.e. risk of death
- Approved cleaning methods for aviation life support equipment
- Components of a parachute and their function
- Parachute assembly materials of construction
- Environmental conditions that may affect parachutes and parachute assemblies including ultraviolet degradation
- Types of corrosion and contamination that may affect parachute assemblies
- Handling, storage and transit procedures relating to parachutes
- Physiological effects of flight
- Sequence of ejection
- Operation of person carrying parachutes
- Operation of ballistic parachutes in aircraft recovery
- Purpose of different types of canopies
- Modification requirements for parachutes
- Requirements for a parachute servicing facility
- Operation of testing and measuring equipment and tools used to maintain parachutes
- Repair limitations for parachutes
- Packing tools and measuring equipment required to pack parachutes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and pack parachutes while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that parachute testing and inspection procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret maintenance and packing procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to parachute maintenance and packing is essential. This is to be demonstrated through demonstration of the ability to recognise faults, replace components and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct packing procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the following range of tasks:

- Correctly packing a minimum of three parachutes consecutively and without the need for corrective action by the supervisor
- Recognising the limits of own authority
- Replacing canopy/harness including line sequence tests
- Correctly repairing a tear in parachute canopy material through patching
- Inspecting, testing and replacing unserviceable parts of a quick release fitting
- Recognising a range of faults and their serviceability

EVIDENCE GUIDE	
	limits and repairing within limitations/tolerances. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard procedures	• <i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions

RANGE STATEMENT	
	• civil aviation safety regulations and advisory material • standing instructions
Faults	• <i>Faults may include:</i> • broken stitching • broken quick release fitting springs • contamination • corrosion of metal parts • damaged hardware • damaged quick release fitting screws • excessive wear • expired parachute components • frayed lines • incorrect manufacture • pulled threads • incorrect rigging line sequence • seized quick release fitting lugs • stretched lines • tears in parachute • ultraviolet degradation
Parts of the parachute	<i>Parts of the parachute may include:</i> • canopy • hardware (e.g. buckles, eyelets, connector links) • harness • parachute housing (e.g. pack) • quick release fitting • rigging lines
Basic parachute repairs	<i>Basic parachute repairs may include:</i> • broken stitching • corrosion (e.g. fittings) • damaged hardware • frayed lines • pulled threads • tears in parachute
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA506A Maintain and pack survival inflatable life rafts and escape slides

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain and pack survival inflatable life rafts and escape slides. Maintenance includes inspecting, testing, isolating faults, replacing components and cleaning prior to packing. The unit does not include repairing life rafts and escape slides. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUAEFLS006A Maintain and pack survival inflatable life rafts or escape slides.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and packing of survival inflatable life rafts and escape slides. Maintenance involves inspection, testing, fault diagnosis, replacement of parts and cleaning. The unit applies to a range of types of survival inflatable life raft and to a number of types of inflatable aircraft escape slide.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Maintain survival inflatable life raft or escape slide	1.1. Survival inflatable life raft and associated ancillary equipment or escape slide is inspected for serviceability in accordance with standard procedures. 1.2. Identified faults beyond own authority to rectify are reported to supervisor and faulty survival inflatable life raft, ancillary equipment or escape slide is quarantined. 1.3. Unserviceable parts of the survival inflatable life raft, ancillary equipment or escape slide are replaced in accordance with standard procedures. 1.4. Survival inflatable life raft or escape slide is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.5. Survival inflatable life raft or escape slide is cleaned in accordance with standard procedures 1.6. Survival inflatable life raft or escape slide is presented for inspection by supervisor in accordance with standard procedures. 1.7. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Pack survival inflatable life raft or escape slide	2.1. Survival inflatable life raft or escape slide is packed for use in accordance with standard procedures. 2.2. Ancillary equipment is packed for use in accordance with standard procedures. 2.3. Survival inflatable life raft or escape slide is presented for inspection by supervisor in accordance with standard enterprise procedures. 2.4. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

REQUIRED SKILLS AND KNOWLEDGE

- Application of occupational health and safety (OHS) practices relating to survival inflatable life raft, ancillary equipment and escape slide maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable
- Use of Material Safety Data Sheets (MSDS)
- Use of maintenance publications, drawings and documentation relating to survival inflatable life raft, ancillary equipment and escape slide maintenance
- Handling, storing and organising transport of equipment
- Delivering briefings to personnel in relation to operating survival inflatable life rafts and escape slides
- Inflating/deflating survival inflatable devices for maintenance
- The use of applicable testing and measuring equipment, tools and maintenance documentation to:
 - test survival inflatable devices for serviceability
 - replace unserviceable components or items of ancillary equipment in accordance with approved procedures
 - select and use appropriate survival inflatable device cleaning materials
- Solder battery terminals on emergency locator transmitters
- Tying various types of knots, including:
 - reef knot
 - bowline
 - thumb knot
 - half hitch
- Hand sewing
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to survival inflatable life raft and escape slide maintenance including the selection and use of PPE
- How to obtain MSDS
- Relevant safety precautions including storage and handling of compressed gas cylinders and survival and distress pyrotechnics
- Critical nature of maintaining and packing survival inflation devices, i.e. risk of death
- Search and rescue procedures
- Priorities of survival and how they relate to survival inflatable life rafts and associated ancillary equipment
- Electrical principles

REQUIRED SKILLS AND KNOWLEDGE

- Approved cleaning methods for aviation life support equipment
- Environmental conditions that may affect survival inflation devices including ultraviolet degradation
- Types of corrosion and contamination that may affect survival inflation devices
- Handling, storage and transit procedures relating to survival inflation devices
- Survival inflation devices and methods of operation
- Operation of emergency locator beacons and emergency locator transmitters
- Principles of operation of inflation mechanisms
- Components of a survival inflation device and their function
- Repair limitations for survival inflatable life rafts and escape slides
- Modification requirements for survival inflatable life rafts and escape slides
- Requirements for a survival inflation device servicing facility
- Packing tools and measuring equipment required to pack survival inflatable devices
- Use of survival inflatable life rafts including associated ancillary equipment and escape slides

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain and pack survival inflatable life rafts and escape slides while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that survival inflatable device testing and inspection procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret maintenance and packing procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to survival inflatable life raft and escape slide maintenance and packing is essential. This is to be demonstrated through demonstration of the ability to recognise faults and replace components that are within

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	the bounds of the individual's authority, and through the demonstration of correct packing procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the following range of tasks: • Completing a minimum of three inflation tests without the need for corrective action by the supervisor • Recognising the limits of own authority • Testing cylinder weight and determining if it is within tolerance • Correctly packing a minimum of three survival inflatable life rafts or escape slides without the need for corrective action by the supervisor • Recognising a range of faults and their serviceability limits (faults must include incorrect manufacture and verifying expiry date of inflatable life raft and ancillary equipment or escape slide) This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Applicable types of survival inflatable life rafts

Survival inflatable life rafts may include:

- 10U Mk8
- F2B
- LRU 16

Ancillary equipment

Ancillary equipment may include:

- electronic locating devices
- lighting devices
- pyrotechnics
- rations
- survival/location aids
- water

Applicable types of escape slide

Escape slides may include:

- 19D22454-2
- 19D22387-2
- 19D22454-5
- 19D22454-6

Standard procedures

Standard procedures may be found in any or all of:

- State/Territory/Commonwealth OH&S legislation, regulations and codes
- Australian Standards
- equipment manufacturers' specifications, and procedures
- industry practices
- safety manual
- maintenance schedules
- work instructions
- maintenance organisation manual
- MSDS
- defence regulations and instructions
- civil aviation safety regulations and advisory material

RANGE STATEMENT	
	standing instructions
Faults	<i>Faults may include:</i> - abrasion - broken stitching - contamination - corrosion of metal parts - damaged hardware - delamination/porosity - expired components or equipment - faulty valves - frayed lines - holes - incorrect manufacture - lifting tapes - ultraviolet degradation
Parts	<i>Parts may include:</i> - cylinders - operating head - valves - valise
Testing:	<i>Testing may include:</i> - checking ancillary equipment (e.g. electronic locating devices, survival/location aids) - cylinder weight tolerance - inflation tests - light and battery test
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance activities - individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA507A Maintain, pack and fit survival inflatable buoyancy vests

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain, pack and fit survival inflatable buoyancy vests. Maintenance includes inspecting, testing, isolating faults, replacing components and cleaning prior to packing. The unit does not include repairing buoyancy vests. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS007A Maintain, pack and fit survival inflatable buoyancy vests.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance and packing of survival inflatable life rafts and escape slides. Maintenance involves inspection, testing, fault diagnosis, replacement of parts and cleaning. The unit applies to a range of types of survival inflatable life raft and to a number of types of inflatable aircraft escape slide.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Maintain survival inflatable buoyancy vests	1.1. Survival inflatable buoyancy vests and associated ancillary equipment are inspected for serviceability in accordance with standard procedures. 1.2. Identified faults beyond own authority to rectify are reported to supervisor and faulty survival inflatable buoyancy vest and/or ancillary equipment is quarantined. 1.3. Unserviceable parts of the survival inflatable buoyancy vest and/or ancillary equipment are replaced in accordance with standard procedures. 1.4. Survival inflatable buoyancy vest is tested for serviceability in accordance with standard procedures and manufacturer's specifications. 1.5. Survival inflatable buoyancy vest is cleaned in accordance with standard procedures 1.6. Survival inflatable buoyancy vest is presented for inspection by supervisor in accordance with standard procedures. 1.7. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Pack survival inflatable buoyancy vests	2.1. Survival inflatable buoyancy vest is packed for use in accordance with standard procedures. 2.2. Ancillary equipment is packed for use in accordance with standard procedures. 2.3. Survival inflatable buoyancy vest is presented for inspection by supervisor in accordance with standard enterprise procedures. 2.4. Relevant documentation is completed and processed in accordance with standard enterprise procedures.
3. Fit survival inflatable buoyancy vests	3.1. Fitting process is explained to the participant so that optimal fit can be achieved through relevant feedback. 3.2. Participant is measured to select appropriate size survival inflatable buoyancy vest. 3.3. Survival inflatable buoyancy vest is adjusted to optimise fit. 3.4. Survival inflatable buoyancy vest fit is verified through participant feedback and supervisor approval. 3.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to survival inflatable life raft, ancillary equipment and escape slide maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable
- Use of Material Safety Data Sheets (MSDS)
- Use of maintenance publications, drawings and documentation relating to survival inflatable buoyancy vests and ancillary equipment maintenance
- Handling, storing and organising transport of equipment
- Delivering briefings to personnel in relation to operating, donning/doffing and fitting of survival inflatable buoyancy vests
- Inflating/deflating survival inflatable devices for maintenance
- The use of applicable testing and measuring equipment, tools and maintenance documentation to:
 - test survival inflatable devices for serviceability
 - replace unserviceable components or items of ancillary equipment in accordance with approved procedures
 - select and use appropriate survival inflatable device cleaning materials
- Solder battery terminals on emergency locator transmitters
- Tying various types of knots, including:
 - reef knot
 - bowline
 - thumb knot
 - half hitch
- Hand sewing
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to survival inflatable buoyancy vest maintenance including the selection and use of PPE

REQUIRED SKILLS AND KNOWLEDGE

- How to obtain MSDS
- Relevant safety precautions including storage and handling of compressed gas cylinders and survival and distress pyrotechnics
- Critical nature of maintaining and packing survival inflation devices, i.e. risk of death
- Search and rescue procedures
- Priorities of survival and how they relate to survival inflatable buoyancy vests and associated ancillary equipment
- Electrical principles
- Approved cleaning methods for aviation life support equipment
- Environmental conditions that may affect survival inflation devices including ultraviolet degradation
- Types of corrosion and contamination that may affect survival inflation devices
- Handling, storage and transit procedures relating to survival inflation devices
- Survival inflation devices and methods of operation
- Operation of emergency locator beacons and emergency locator transmitters
- Principles of operation of inflation mechanisms
- Components of a survival inflation device and their function
- Repair limitations for survival inflatable buoyancy vests
- Modification requirements for survival inflatable buoyancy vests
- Requirements for a survival inflation device servicing facility
- Packing tools and measuring equipment required to pack survival inflatable devices
- Use of survival inflatable buoyancy vests including associated ancillary equipment

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain, pack and fit survival inflatable buoyancy vests while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that survival inflatable device testing and inspection

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	procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret maintenance, packing and fitting procedures and apply them in practice is critical. Evidence of transferability of skills and knowledge related to survival inflatable buoyancy vest maintenance and packing is essential. This is to be demonstrated through demonstration of the ability to recognise faults and replace components that are within the bounds of the individual's authority, and through the demonstration of correct packing and fitting procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the following range of tasks: • Completing a minimum of three inflation tests without the need for corrective action by the supervisor • Recognising the limits of own authority • Testing cylinder weight and determining if it is within tolerance • Correctly packing a minimum of three survival inflatable buoyancy vests without the need for corrective action by the supervisor • Correctly fitting survival inflatable buoyancy vests to a minimum of three different people without supervisor intervention • Recognising a range of faults and their serviceability limits (faults must include incorrect manufacture and verifying expiry date of inflatable buoyancy vest and ancillary equipment) This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment

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	would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Applicable survival inflatable buoyancy vests	Survival inflatable buoyancy vests may include: • Secumar AUS2
Ancillary equipment	<i>Ancillary equipment may include:</i> • electronic locating devices • lighting devices • pyrotechnics • rations • survival/location aids • water
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS

RANGE STATEMENT	
	• defence regulations and instructions • Civil Aviation Safety Regulations and advisory material • standing instructions
Faults	<i>Faults may include:</i> • abrasion • broken stitching • contamination • corrosion of metal parts • damaged hardware • delamination/porosity • expired components or equipment • faulty valves • frayed lines • holes • incorrect manufacture • lifting tapes • ultraviolet degradation
Parts	<i>Parts may include:</i> • buoyancy chambers • cylinders • hardware • operating head • valves • valise • zippers
Testing	• <i>Testing may include:</i> • checking ancillary equipment (e.g. electronic locating devices, survival/location aids) • cylinder weight tolerance • inflation tests • light and battery test
Adjustment	<i>Adjustment to vest may include:</i> • breast height • chest • waist
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities

RANGE STATEMENT

	individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA508A Maintain, install and remove restraint systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain, install and remove personal restraint systems. Maintenance includes inspecting, isolating faults, replacing components, repairing and cleaning prior to returning the item to service. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS008A Maintain, install and remove restraint systems.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the maintenance, installation and removal of personal restraint systems. Maintenance may be performed in-situ or in a maintenance workshop and involves inspection, fault diagnosis, replacement of parts, completion of repairs and cleaning. The unit applies to a range of personal restraint systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA511A	Operate and maintain sewing and overlocking machines
	LMFSF2002B	Machine sew materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain restraint belts/harnesses	1.1. Restraint belts/harnesses are inspected for serviceability in accordance with standard procedures. 1.2. Identified faults beyond own authority to rectify are reported to supervisor and faulty restraint system is quarantined. 1.3. Unserviceable parts of a quick release fitting are inspected, tested and replaced. 1.4. Unserviceable parts of the restraint belts/harnesses are replaced to render restraint system serviceable in accordance with standard procedures. 1.5. Basic restraint belt/harness stitching repairs are completed in accordance with standard procedures. 1.6. Restraint belts/harnesses are cleaned in accordance with standard procedures 1.7. Restraint belts/harnesses are presented for inspection by supervisor in accordance with standard procedures. 1.8. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
2. Remove restraint systems	2.1. Approval to remove restraint system is obtained in accordance with standard enterprise procedures. 2.2. Restraint system is removed from the aircraft in accordance with applicable maintenance publication. 2.3. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.
3. Install restraint systems	3.1. Approval to fit restraint system is obtained in accordance with standard enterprise procedures. 3.2. Restraint system is fitted to the aircraft in accordance with applicable maintenance publication. 3.3. Maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to restraint system maintenance processes, including the selection and correct use of personal protective equipment (PPE) where applicable
- Handling, storing and organising transport of equipment
- Use of Material Safety Data Sheets (MSDS)
- Use of maintenance publications, drawings and documentation relating to restraint system maintenance
- The use of applicable testing and measuring equipment, tools and maintenance documentation to:
 - replace unserviceable components in accordance with approved procedures
 - select and use appropriate restraint system cleaning materials
 - repair restraint systems (both hand and machine sewing)
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to restraint system maintenance including the selection and use of PPE
- How to obtain MSDS
- Critical nature of maintaining and fitting restraint systems
- Approved cleaning methods for aviation life support equipment
- Components of a restraint system and their function
- Flight line procedures
- Ultraviolet degradation
- Types of corrosion and contamination that may affect restraint systems
- Handling, storage and transit procedures relating to life support equipment
- Modification requirements for restraint systems
- Operation of testing and measuring equipment and tools used to maintain restraint systems
- Repair limitations for restraint systems

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain, install and remove restraint systems while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that restraint system inspection procedures, cleanliness requirements, repair procedures and safety precautions are fully observed, understood and complied with. Ability to interpret maintenance, installation and removal procedures and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to restraint system maintenance, installation and removal is essential. This is to be demonstrated through demonstration of the ability to recognise faults, replace components and perform appropriate repairs that are within the bounds of the individual's authority, and through the demonstration of correct installation and removal procedures. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the inspection, repair, installation and removal of restraint systems, including the demonstration of the ability to recognise a range of faults and their serviceability and repair limitations/tolerances (must include verification of expiry dates of restraint system component parts and recognition of incorrect manufacture). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and

EVIDENCE GUIDE	
	special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Restraint belts/harnesses	<i>Restraint belts/harnesses may include:</i> • fixed point attached harness • passenger restraint belts • retractable restraint harnesses (will be attached to inertia reel but the inertia reel does not form part of the restraint system)
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • Civil Aviation Safety Regulations and advisory material

RANGE STATEMENT	
	standing instructions
Faults	<i>Faults may include:</i> - broken quick release fitting springs - broken stitching - contamination - corrosion of metal parts - damaged hardware - damaged quick release fitting screws - excessive wear - expired date of restraint components - incorrect manufacture - pulled threads - seized quick release fitting lugs - ultraviolet degradation
Parts	<i>Parts of the restraint belts/harnesses may include:</i> - belt - fixed point attachment line - hardware (e.g. buckles) - harness - parachute housing (e.g. pack) - quick release fittings including lugs, springs and screws
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance activities - individual or team related activities

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA509A Manufacture, repair and alter aircraft related fabric components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to manufacture, repair and alter aircraft and support equipment fabric components. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to PUADEFLS009A Manufacture, repair and alter aircraft related fabric components

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the manufacture, repair and alteration of aircraft and support equipment fabric components. Manufacture and alteration may be to existing designs or may also involve design. Repair may involve sewing and/or the use of adhesives. The unit applies to a range of aircraft environmental protection sets, aircraft life support equipment components, aircraft soft furnishings and associated trimming, aircrew personal fit and associated life support equipment, and to ground support equipment covers.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	MEA511A	Operate and maintain sewing and overlocking machines
	LMFSF2002B	Machine sew materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manufacture a fabric component	1.1. Technical instructions are identified and interpreted to ensure compliance in accordance with standard procedures. 1.2. Detailed working plan is produced in accordance with standard procedures. 1.3. Fabric component is assembled and fittings are attached in accordance with standard procedures. 1.4. Aircraft related fabric components are presented for inspection by supervisor in accordance with standard enterprise procedures. 1.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures.
2. Repair a fabric component	2.1. Technical instructions are identified and interpreted to ensure faults are corrected in accordance with standard procedures. 2.2. Fabric component is repaired in accordance with standard procedures. 2.3. Repaired components are presented for inspection by supervisor in accordance with standard enterprise procedures. 2.4. Relevant documentation is completed in accordance with standard enterprise procedures.
3. Alter a fabric component to meet customer requirements	3.1. Customer is consulted to establish the requirements to alter the fabric component and to ensure defined outcomes are met. 3.2. Identified alterations beyond own authority to alter are reported to supervisor. 3.3. A detailed working plan is produced, where necessary, in accordance with standard procedures. 3.4. Altered fabric components are presented for inspection by supervisor in accordance with standard enterprise procedures. 3.5. Relevant documentation is completed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of occupational health and safety (OHS) practices relating to fabric component manufacture, repair and alteration, including the selection and correct use of personal protective equipment (PPE) where applicable
- Handling, storing and organising transport of equipment
- Use of Material Safety Data Sheets (MSDS)
- Use of maintenance publications, drawings and documentation relating to fabric component manufacture, repair and alterations
- Apply basic sewing techniques associated with the manufacture, repair and alteration of aircraft fabric components
- Use hand sewing techniques
- Use basic drawing tools
- Calculate dimension and allowable dimension variations
- Complete measurements and estimate fabric requirements and other material requirements
- Use pre-checking and inspection techniques to anticipate cutting problems and avoid reworking and wastage
- Use relevant hand and power tools
- Use the limited workplace technology related to cutting, including tools, equipment, calculators and measuring devices
- Cleaning and maintenance of equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to fabric component manufacture, repair and alteration including the selection and use of PPE
- How to obtain MSDS
- Basic sewing techniques using AS 2860 1986
- Construction principles of fabric components
- Cutting equipment and techniques
- Design features of finished items
- Fabric types, common faults and inspection procedures
- Textiles - stitch types - classification and terminology
- Impact of cutting on fabrics

REQUIRED SKILLS AND KNOWLEDGE

- Geometric drawing processes and techniques
- Reading and interpreting specifications
- Types of corrosion and contamination that may affect aircraft fabric components

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to manufacture, repair and alter aircraft-related fabric components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. It is essential that fabric component manufacture, repair and alteration procedures and safety precautions are fully observed, understood and complied with. Ability to interpret fabric component requirements and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to fabric component manufacture, repair and alteration is essential. This is to be demonstrated through demonstration of the ability to perform appropriate manufacturing, repair and alteration tasks that are within the bounds of the individual's authority. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on the following tasks:

- Recognising the limits of own authority
- Correctly manufacture three fabric components from technical instructions using machine sewing and at

EVIDENCE GUIDE	
	least one other assembly method (hand sew, press fit, adhere or staple) • Recognising at least three faults and identifying limits of repair for the fabric components • Altering a fabric component to meet customer requirements This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities
Procedures and requirements	Refer to:industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Fabric components	<i>Fabric components may include:</i>

RANGE STATEMENT	
	• aircraft environmental protection sets and warning devices • aircraft life support equipment components • aircraft soft furnishings and associated trimming • aircrew personal fit and associated life support equipment • ground support equipment covers
Technical instructions	<i>Technical instructions may include:</i> • aircraft operational requirements • job orders • manufacturers' specifications • maintenance manuals • modification instructions • technical drawings
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OH&S legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • Civil Aviation Safety Regulations and advisory material • standing instructions
Detailed working plan	<i>Detailed working plan may include:</i> • cutting plan • expected time of completion • manpower requirements • method and sequence of assembly • resource requirements (material, fittings, tools and ground support equipment) • technical sketch (working drawing)
Assembly of fabric components	<i>Assembly of fabric components and attachment of</i>

RANGE STATEMENT	
and attachment of fittings	<i>fittings may include:</i> • adhering • hand sewing • machine sewing • press fitting • stapling
Faults	<i>Faults may include:</i> • broken stitching • broken zippers • contamination • corrosion of metal parts • damaged fittings • excessive wear • incorrect manufacture • tears in fabric • ultraviolet degradation
Customers	<i>Customers may include:</i> • aircraft configuration authorities • aircrew • engineering maintenance managers • supervisors
Defined outcomes	<i>Defined outcomes may include:</i> • affect on fit of fabric components • affect on performance of altered fabric components • availability of resources • expected time of completion

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		
	MEA118A	Conduct self in the aviation maintenance environment

MEA510A Maintain seat and pod electrical and electronic systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aircraft Life Support and Furnishing Certificate III and IV training pathways. It covers the competencies required for the removal, installation and limited maintenance of seat and pod electrical and electronic systems during the overhaul of seats and pods. No licensing requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit requires application of hand skills in the removal and installation of electrical and electronic system components during the overhaul of aircraft seats and pods, and the use of basic electrical test equipment and in-flight entertainment system test sets to confirm system serviceability. Applications include electrical and electronic system components fitted to seats and pods undergoing overhaul in workshops

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove and inspect seat and pod electrical system components.	1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual to ensure personnel safety. 1.2. <i>Removal of electrical system components</i> is carried out in accordance with the applicable maintenance manual. 1.3. Removed components are inspected for <i>visible signs of damage or deterioration</i> in accordance with maintenance manuals and standard enterprise procedures. 1.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 1.5. Removed components are tagged, packaged or discarded in accordance with specified procedures.
2. Remove and inspect seat and pod	2.1. System is rendered safe and prepared in accordance with the applicable maintenance manual to ensure

ELEMENT	PERFORMANCE CRITERIA
electronic system components	personnel safety. 2.2. Removal of electronic system components is carried out in accordance with the applicable maintenance manual. 2.3. Removed components are inspected for visible signs of damage or deterioration in accordance with maintenance manuals and standard enterprise procedures. 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures. 2.5. Removed components are tagged, packaged or discarded in accordance with specified procedures.
3. Install seat and pod electrical system components	3.1. Electrical system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 3.2. Physical installation of electrical components is carried out in accordance with the applicable maintenance manual. 3.3. System is reinstated to correct physical condition in preparation for testing. 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
4. Install seat and pod electronic system components.	4.1. Electronic system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life. 4.2. Physical installation of electronic components is carried out in accordance with the applicable maintenance manual. 4.3. System is reinstated to correct physical condition in preparation for testing. 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.
5. Functionally test seat and pod electrical and electronic systems	5.1. Applicable system test set is connected to seat or pod in accordance with the applicable maintenance manual or approved vendor procedures. 5.2. Power is applied to the seat or pod in accordance with applicable maintenance manual. 5.3. Seat or pod electrical system is functionally tested for correct operation in accordance with the

ELEMENT	PERFORMANCE CRITERIA
	applicable maintenance manual. 5.4. Seat or pod electronic system is functionally tested using the applicable test set in accordance with the applicable maintenance manual. 5.5. Test equipment is removed and required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices
- The use of approved maintenance documentation and aircraft publications relating to aircraft seat and pod electrical and electronic systems and components
- Recognition of defects in and deterioration of electrical cables to aircraft industry standards, including crimped and soldered joints
- The correct interpretation of aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- Inspection of electrical looms and harness pre and post removal and installation to ensure minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards
- Positive identification of seat and pod electrical and electronic system components
- Plug connector pin removal and insertion where soldering is not required
- Recognition of damage and visual defects in electrical components such as actuators, motors and switches
- Recognition of damage and visual defects in electronic system components such as display screens, tuners, volume controls, audio headset receptacles and data cables

Required knowledge

Look for evidence that confirms knowledge of:

- Relevant OHS procedures
- Component attachment methods

REQUIRED SKILLS AND KNOWLEDGE

- Connection of hardware and plugs
- Electrical wiring used in aircraft and wire marking
- Plug/socket pin numbering and terminal block identification
- Cable and loom installation requirements including bonding and screening
- Crimping tools and crimp terminals
- Procedures for removal and insertion of plug connector pins where soldering is not required
- Handling and maintenance precautions relating to electronic displays and electrostatic sensitive devices
- Electromagnetic environment
- Data cable installation requirements

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills, use specialist tools and use maintenance publications to remove and install seat and pod electrical and electronic system components, and to functionally test the systems while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that applicable cleanliness requirements and OH&S safety precautions are fully observed, including awareness of electrostatic discharge procedures.

Evidence of transferability of skills and knowledge related to removal and installation is essential. An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of

EVIDENCE GUIDE	
	Competency are being achieved on the range of components and tasks listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Removal and installation of electrical components	<i>Removal and installation of electrical components involves one or more of the following connection methods:</i> • bolted • plug connectors.
Electrical system components	<i>Electrical system components may include:</i> • electrical cables and looms • selectors and switches • motors and actuators • relays, control units and modules

RANGE STATEMENT	
Electronic system components	<i>Electronic system components may include:</i> • display units • tuners/selectors • volume controls • audio headset receptacles • data cables
Visible signs of damage or deterioration	<i>Visible signs of damage or deterioration may include:</i> • broken or chafed wires • corrosion of plugs and connectors • physical damage to components • wear • evidence of electrical or electronic component overheating
Application	Application of this unit may relate to scheduled or unscheduled removal and installation of seat and pod electrical and electronic systems and components, and to system functional testing during seat and pod overhaul in workshops

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA240B	Use electrical test equipment to perform

Co-requisite units		
		basic electrical tests

MEA511A Operate and maintain sewing machines and overlockers

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This Unit is part of the Aeroskills Life Support and Furnishing AQF III and IV training pathways. It covers the competencies required to maintain sewing machines and overlockers. No licensing requirements apply to this unit at the time of publication. This Unit is equivalent to Unit LMTPTF05A Operate and maintain sewing machines - 3 which was deleted from a revised version of its parent Training Package, but the content remains valid for Aeroskills Life Support and Furnishing.

Application of the Unit

Application of the unit	This unit requires application of skills and knowledge relating to the operation and maintenance of sewing machines and overlockers in the maintenance of items of aircraft life support equipment and in the fabrication and maintenance of items of aircraft soft furnishings. The unit applies to sewing machines and overlockers used in the range of tasks mentioned above.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work and prepare work area	1.1. Work is planned to maximise safety and productivity 1.2. Work area is cleared and cleaned to provide work table free of obstructions and clear access to sewing/overlocking machine 1.3. Safe <i>working environment</i> is established 1.4. Suitable electrical power outlets, if required, are identified 1.5. Assistance to move and position workpiece is obtained if necessary
2. Select thread and needle	2.1. Type of material to be sewn, type of stitch to be used and nature of duty to which finished product is to be subjected is determined to assist in selection of thread and needle 2.2. Suitable thread is selected with regard to thread

ELEMENT	PERFORMANCE CRITERIA
	material, diameter of thread, tensile strength and colour 2.3. Appropriate needle is chosen to suit type of thread, type of stitch and material to be sewn
3. Set up machine	3.1. Machine is examined for damage, missing components or other defects 3.2. Power cords are examined for knots, unsafe routing and insulation damage 3.3. Machine is safely connected to power and correct 'power-on' procedure is followed 3.4. Condition of needle is checked to ensure it is sharp, clean and free from rust and dirt 3.5. Needle is fitted to machine 3.6. Machine is threaded and thread is checked for free travel from spool 3.7. Thread tension and other machine settings are checked and adjusted using test pieces if necessary
4. Operate machine	4.1. Workpiece is correctly aligned to machine 4.2. Machine is operated in accordance with standard procedures and OHS requirements 4.3. Workpiece is appropriately fed into machine 4.4. Performance of machine is monitored through regular checking of thread tension and other settings and inspection of stitching in finished product
5. Inspection, quality, labelling and documentation	5.1. Workpiece is removed from machine using assistance if necessary 5.2. Completed work is inspected to verify that it meets applicable technical instructions 5.3. Any areas in need of rework or rectification are identified and marked 5.4. Rework is performed or other appropriate action arranged 5.5. Completed product is labelled or tagged and any necessary documentation completed in accordance with standard enterprise procedures
6. Clean up and maintain equipment	6.1. Machine is switched off using correct 'power off' procedures 6.2. Machine is cleaned, and programmed maintenance, which is within the province of the operator, is performed in accordance with enterprise requirements and manufacturer's specifications

ELEMENT	PERFORMANCE CRITERIA
	6.3. Worn or damaged needles are disposed of in accordance with safe working practice 6.4. Supervisor is notified of any abnormal conditions requiring maintenance or repair

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills to:

- interpret and apply work instructions and established procedures
- plan and coordinate work activities
- locate and interpret technical information about machines and materials used in aircraft life support and furnishing
- select appropriate needle and thread
- identify unsatisfactory machine performance
- use relevant hand and power tools
- use relevant chemicals and cleaning agents and dispose of waste products
- maintain machines and work area
- apply all relevant safety practices
- communicate effectively within the workplace
- document and transfer information

Required knowledge

Look for evidence that confirms knowledge of:

- precautions and safe working practices based on relevant OH&S legislation, codes of practice, policies and procedures
- advanced workpiece construction principles and methods
- characteristics of a wide range of materials used in aircraft life support and furnishing
- operating principles of a wide range of sewing/overlocking machines
- types of needles and threads and their applications
- types of stitching and their applications
- standard industry practice for needle storage and safe disposal
- the range of sewing/overlocking machines, hand tools and power tools used in sewing/overlocking processes and their appropriateness for particular applications

REQUIRED SKILLS AND KNOWLEDGE

- relevant quality standards for sewn/overlocked products
- power sources such as single phase, three phase and weather protected outlets
- electrical isolation procedures for sewing/overlocking machines
- safety and environmental requirements of relevant industry and enterprise procedures
- general housekeeping policies and procedures
- recording and reporting procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to operate and maintain sewing and overlocking machines used in aircraft life support and furnishing while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities involving the use of sewing machines/interlockers. It is essential that fabric component manufacture, repair and alteration procedures and safety precautions are fully observed, understood and complied with. Ability to interpret fabric component requirements and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to the use and maintenance of sewing machines and interlockers is essential. This is to be demonstrated through demonstration of the ability to perform appropriate manufacturing, repair and alteration tasks that are within the bounds of the individual's authority. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine

EVIDENCE GUIDE	
	supervision on a sufficient number of occasions or over sufficient period of time to ensure consistent performance across a typical range of sewing and overlocking requirements This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Access is required to: • real or appropriately simulated situations involving the sewing or overlocking of materials used in aircraft life support equipment and in aircraft soft furnishings • information on specifications of materials used in sewing and overlocking, settings for machines, relevant safety procedures and regulations, quality standards, and enterprise procedures • all necessary facilities, sewing/overlocking machines and associated hand and power tools Assessment may occur on the job or in an industry approved simulated environment
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team related activities

RANGE STATEMENT	
Procedures and requirements	Refer to: industry standard procedures specified by manufacturers, regulatory authorities or the enterprise.
Working environment	<i>Working environment may include:</i> • Work organisation procedures and practices relating to the sewing/overlocking of materials • safe use of sewing/overlocking machines and relevant hand and power tools • storage, safe handling and disposal of needles, threads and materials associated with sewing/overlocking • Reporting actions which include verbal and written communication in accordance with enterprise policies and procedures • Oral, written or visual communication including completion of standard forms, interpretation of information and instructions associated with workplace activities, and recording and reporting of work outcomes • Procedures for safety, environmental protection, housekeeping and quality as specified by equipment and materials manufacturers, regulatory authorities and the enterprise
Standard procedures	<i>Standard procedures may be found in any or all of:</i> • State/Territory/Commonwealth OHS legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications, and procedures • industry practices • safety manual • maintenance schedules • work instructions • maintenance organisation manual • MSDS • defence regulations and instructions • Civil Aviation Safety Regulations and advisory material • standing instructions
Technical instructions	<i>Technical instructions may include:</i>

RANGE STATEMENT

	• aircraft operational requirements • job orders • manufacturers' specifications • maintenance manuals • modification instructions • technical drawings

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aircraft life support

Co-requisite units

Co-requisite units		

MEA601A Maintain aircraft egress systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Aeroskills Aircraft Armament Certificate IV training pathway. It covers the competencies required to maintain aircraft egress systems that contain explosive ordnance. This unit was developed from PUADFE0717A Maintain aircraft egress systems and is equivalent to that unit.

Application of the Unit

Application of the unit	This unit covers the maintenance of aircraft egress systems that contain explosive ordnance. Maintenance covers the entire egress system, including the explosive ordnance. It involves the installation and removal of safety devices, disarming and rearming, inspecting, testing, replacing parts, cleaning and painting.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	PUADEFEO101B	Work safely with explosive ordnance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Fit and remove safety devices	1.1. Safety devices are fitted to aircraft egress systems in accordance with standard operating and maintenance procedures 1.2. Safety devices are removed from aircraft egress systems and are correctly stowed in accordance with standard operating and maintenance procedures
2. Prepare for aircraft egress system maintenance	2.1. Applicable maintenance documentation is identified and obtained 2.2. Aircraft egress system maintenance requirements are identified from applicable documentation 2.3. Special tools and equipment required for the maintenance tasks are obtained and positioned
3. Inspect, test and maintain aircraft egress systems	3.1. Aircraft egress systems are inspected in accordance with applicable maintenance documentation 3.2. Relevant tests are safely conducted and results are recorded in accordance with standard enterprise procedures 3.3. Required maintenance tasks are performed in accordance with applicable maintenance documentation and standard enterprise procedures 3.4. Emergency and contingency procedures are performed as required
4. Remove and install aircraft egress system components	4.1. Non-explosive egress system components are removed and installed in accordance with applicable maintenance documentation and standard enterprise procedures 4.2. Explosive egress system components are removed and installed in accordance with applicable maintenance documentation and standard enterprise procedures
5. Complete aircraft egress system maintenance operation	5.1. Removed non-explosive components are tagged and packaged for transportation in accordance with standard enterprise procedures 5.2. Removed explosive components are tagged and packaged in accordance with procedures for packaging and transportation of explosive ordnance/dangerous goods 5.3. Special tools and equipment are maintained in accordance with standard enterprise procedures 5.4. Documentation and records are completed in

ELEMENT	PERFORMANCE CRITERIA
	accordance with standard enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (OHS) procedures, including selection and use of personal protective equipment
- fitment of applicable safety devices
- egress system disarming and rearming
- safely handling explosive components
- conducting tests involving continuity, gauging and measuring
- identifying and selecting applicable items of specialist equipment and tools
- using maintenance documentation, hand tools, specialist tools and equipment to perform egress system maintenance tasks
- preparing removed explosive components for safe storage or transportation

Required knowledge

Look for evidence that confirms knowledge of:

- egress system construction, layout and operation
- operation, characteristics and limitations of aircraft egress systems
- effect of environmental conditions
- colour coding, marking and labels associated with egress systems
- operation, characteristics and limitations of specialist tools and equipment
- egress system test procedures
- safety precautions associated with explosive components
- requirements for handling and disposal of explosive components
- general OHS procedures applicable to egress system maintenance, including applicable personal protective equipment
- material safety data sheets (MSDS)

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to maintain aircraft egress systems and system components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft egress system maintenance activities. It is essential that assessment confirms the ability to comply with organisational safety requirements and appropriate legislative and regulatory requirements while maintaining aircraft egress systems. The ability to work safely within an explosive ordnance environment, conduct applicable tests and maintain relevant documentation is critical.

Evidence of transferability of skills and knowledge related to egress system maintenance is essential. This is to be established through demonstration of the ability to:

- render the system safe
- perform relevant inspections and tests, replace components (including disarming and re-arming the system)
- perform appropriate maintenance tasks.

The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a range of tasks that is representative of the maintenance tasks, tests and the range of non-explosive and explosive components listed in the Range Statement.

This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for

Competency should be assessed in the workplace or simulated workplace using materials, tools and

EVIDENCE GUIDE	
assessment	equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate. Access will also be required to facilities and resources used in the storage, distribution or maintenance of explosive ordnance, including a licensed explosive site.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Applicable maintenance documentation	Applicable maintenance documentation may include: • defect reports • maintenance releases containing details of unserviceabilities • modification orders or leaflets • service bulletins • instructions issued by airworthiness authorities • work instructions • servicing schedules • maintenance manuals • standards and drawings • applicable airworthiness and explosive ordnance regulations • standing instructions • quality manuals • safety manuals

RANGE STATEMENT	
	• maintenance and explosives records
Required maintenance tasks	Required maintenance tasks may include: • arming and de-arming • cleaning • component changes • painting
Egress system components	Non-explosive components may include: • barometric and gravitational sensing components • canopy jettison components • catapults • ejection seat railings and guns • inertia reels • parachute assemblies • pressure source bottles • survival equipment Explosive components may include: • ejection handles • ejection seat cartridges and initiators • explosive connectors • explosive delay elements • flexible linear shaped charges • rocket motors • shielded mild detonating cord • special function cartridges
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA602A Remove and install aircraft stores management system components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Armament Certificate IV training pathway. It covers the competencies required to reconfigure aircraft stores management system (SMS) components. The unit was developed from Australian Defence Force Enterprise unit DDDRARM301A Remove and install aircraft stores management systems and components and is equivalent to that unit.

Application of the Unit

Application of the unit	This unit applies to members of the Australian Defence Force who are required to apply explosive ordnance safety and handling procedures, hand skills and use maintenance documentation/publications in the removal and installation of SMS components to meet system reconfiguration requirements. The unit applies to all aircraft with stores management systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	PUADEFEO101B	Work safely with explosive ordnance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare aircraft for SMS reconfiguration	1.1. SMS reconfiguration task is verified from applicable documentation 1.2. Aircraft safety devices are checked in accordance with relevant technical publications and manuals 1.3. Correct SMS component is visually identified for reconfiguration 1.4. Appropriate tools and ground support equipment are selected in accordance with the task
2. Remove SMS component	2.1. Firing devices are checked and removed if fitted 2.2. SMS component is removed from aircraft in accordance with technical publications and manuals 2.3. Protective covers and panels are fitted to aircraft and stores management system component in accordance with technical publications and manuals
3. Install SMS component	3.1. Applicable protective covers and panels are removed from aircraft and SMS component in accordance with technical publications and manuals 3.2. SMS component is fitted to aircraft in accordance with technical publications and manuals
4. Complete and process documentation	4.1. Applicable documentation is completed for reconfigured SMS 4.2. Documentation is forwarded to Maintenance Control Section (MCS)

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying all safety procedures relating to aircraft SMS
- applying hand skills and applicable maintenance documentation in the removal and installation of SMS components
- testing the operation of systems and components
- using ground support equipment and test equipment

REQUIRED SKILLS AND KNOWLEDGE

- determining SMS reconfiguration requirements
- explosive ordnance safety and handling
- manual handling of SMS components

Required knowledge

Look for evidence that confirms knowledge of:

- the aircraft operating and maintenance environment
- aircraft SMS and interfaces with other aircraft systems
- occupational health and safety (OHS) procedures and policies
- explosive ordnance safety and handling procedures
- technical publications and manuals
- hardware and component attachment methods
- system and component testing requirements
- technical documentation procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to reconfigure SMS by removing and installing system components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft SMS reconfiguration activities. It is essential that assessment confirms the ability to comply with organisational safety requirements and appropriate legislative and regulatory requirements while maintaining SMS. The ability to work safely within an explosive ordnance environment, conduct applicable tests and maintain relevant documentation is critical, including checking specifically for:

- failure to check aircraft safety devices are installed
- failure to ensure firing devices checked and removed if fitted

EVIDENCE GUIDE	
	• commencing task prior to initiating documentation • failure to comply with relevant OHS procedures and policies. Evidence of transferability of skills and knowledge related to SMS component removal and installation is essential. This is to be established through demonstration of the ability to: • render the system safe • perform relevant inspections and tests • replace components • perform appropriate maintenance tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a range of system reconfiguration tasks involving the SMS components listed in Groups 1 to 4 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed on aircraft and/or simulator using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	In addition to evidence provided in the Log of Industrial Experience assessment methods may include questioning and observation in operational or simulated environments. The unit may be assessed independently or in conjunction with unit MEA603A Remove and install aircraft stores suspension system and components.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Reconfiguration and verification activities	Reconfiguration may include: - removal of currently fitted SMS components - installation of specified SMS components Verified may include: - maintenance restrictions - aircraft tail number - aircraft entered as unserviceable - nil stores fitted
Documentation	Documentation may include: - EE500 - CAMM2 documents - SMS documentation
Safety devices	Safety devices may include: - earth lead - aircraft safety pins - aircraft switches
Technical publications and manuals	Technical publications and manuals may include: - aircraft publications - maintenance instruction manuals and process specifications - servicing or service bulletins or structural repair manuals - illustrated parts catalogues, aircraft wiring manuals or drawings - tooling, equipment or manufacturer's manuals - standard practices - enterprise aviation regulations and publications

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
SMS component	SMS components may include: 1. Mission computer 2. Armament computer 3. Encoder/decoder 4. Control unit
Firing devices and checking	Firing devices may include: • stores release cartridges • chaff and flares • gun system • missiles • loaded stores Checked may include: • visually • physically
Applicable	Applicable may include: • aircraft documentation • SMS component documentation
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

MEA603A Remove and install aircraft stores suspension systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Armament Certificate IV training pathway. It covers the competencies required to reconfigure aircraft stores suspension system (SSS) components The unit was developed from Australian Defence Force Enterprise unit DDDRARM302A Remove and install aircraft stores suspension systems and components and is equivalent to that unit.

Application of the Unit

Application of the unit	This unit applies to members of the Australian Defence Force who are required to apply explosive ordnance safety and handling procedures, hand skills and use maintenance documentation/publications in the removal and installation of SSS components to meet system reconfiguration requirements. The unit applies to all aircraft fitted with stores suspension systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance
	MEA103B	Plan and organise aviation maintenance work activities
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
	PUADEFEO101B	Work safely with explosive ordnance

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare aircraft for SSS reconfiguration	1.1. SSS reconfiguration task is verified from applicable documentation 1.2. Aircraft safety devices are checked in accordance with relevant technical publications and manuals 1.3. Correct SSS component is visually identified for reconfiguration 1.4. Appropriate tools and ground support equipment are selected in accordance with the task
2. Remove SSS component	2.1. Firing devices are checked and removed if fitted 2.2. SSS component is removed from aircraft in accordance with technical publications and manuals 2.3. Protective covers and panels are fitted to aircraft and SSS component in accordance with technical publications and manuals
3. Install SSS component	3.1. Applicable protective covers and panels are removed from aircraft and SSS component in accordance with technical publications and manuals 3.2. SSS component is fitted to aircraft in accordance with technical publications and manuals
4. Complete and process documentation	4.1. Applicable documentation is completed for reconfigured SSS 4.2. Documentation is forwarded to Maintenance Control Section (MCS)

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying safety procedures relating to aircraft SSS
- applying hand skills and applicable maintenance manuals in the removal and installation of SSS components
- using ground support equipment and test equipment
- determining SSS reconfiguration requirements

REQUIRED SKILLS AND KNOWLEDGE

- explosive ordnance handling and safety
- manual handling of SSS components

Required knowledge

Look for evidence that confirms knowledge of:

- the aircraft operating and maintenance environment
- aircraft SSS and interfaces with the stores management system and other aircraft systems
- occupational health and safety (OHS) procedures and policies
- explosive ordnance safety and handling procedures
- technical publications and manuals
- hardware and component attachment methods
- system and component test procedures
- technical documentation procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to reconfigure SSS by removing and installing system components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft SSS reconfiguration activities. It is essential that assessment confirms the ability to comply with organisational safety requirements and appropriate legislative and regulatory requirements while maintaining SSS systems. The ability to work safely within an explosive ordnance environment, conduct applicable tests and maintain relevant documentation is critical, including checking specifically for:

- failure to check aircraft safety devices are installed
- failure to ensure firing devices checked and removed if fitted

EVIDENCE GUIDE

	- commencing task prior to initiating documentation - failure to comply with relevant OHS procedures and policies. Evidence of transferability of skills and knowledge related to SSS system component removal and installation is essential. This is to be established through demonstration of the ability to: - render the system safe - perform relevant inspections and tests - replace components - perform appropriate maintenance tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a range of system reconfiguration tasks involving the SSS components listed in Groups 1 to 3 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed on aircraft and/or simulator using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	In addition to evidence provided in the Log of Industrial Experience assessment methods may include questioning and observation in operational or simulated environments. The unit may be assessed independently or in conjunction with unit MEA602A Remove and install aircraft stores management system components.
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Reconfiguration and verification activities

Reconfiguration may include:

- removal of currently fitted SSS components
- installation of specified SSS components

Verified may include:

- maintenance restrictions
- aircraft tail number
- aircraft entered as unserviceable
- nil stores fitted

Documentation

Documentation may include:

- EE500
- CAMM2 documents
- SSS documentation

Safety devices

Safety devices may include:

- earth lead
- aircraft safety pins
- aircraft switches

Technical publications and manuals

Technical publications and manuals may include:

- aircraft publications
- maintenance instruction manuals and process specifications
- servicing or service bulletins or structural repair manuals
- illustrated parts catalogues, aircraft wiring manuals or drawings
- tooling, equipment or manufacturer's manuals
- standard practices
- enterprise aviation regulations and publications

RANGE STATEMENT	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
SSS component	SSS components may include: 1. Bomb release unit 2. Pylon 3. Missile launcher
Firing devices and checking	Firing devices may include: • stores release cartridges • chaff and flares • gun system • missiles • loaded stores Checked may include: • visually • physically
Applicable	Applicable may include: • aircraft documentation • SSS component documentation
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Aviation maintenance

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MEA604A Inspect, test and troubleshoot aircraft stores management systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Armament Certificate IV training pathway. It covers the competencies required to inspect, test and troubleshoot aircraft stores management systems (SMS) and components The unit was developed from Australian Defence Force Enterprise unit DDRARM401A Inspect, test and troubleshoot aircraft stores management systems and components and is equivalent to that unit.

Application of the Unit

Application of the unit	This unit applies to members of the Australian Defence Force who are required to apply explosive ordnance safety and handling procedures, hand skills and the use of maintenance documentation/publications in the inspection, testing and troubleshooting of SMS and components. The unit applies to all aircraft with stores management systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA602A	Remove and install aircraft stores management system components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to inspect, test and troubleshoot aircraft SMS and components	1.1. The task is <i>verified</i> from applicable <i>documentation</i> 1.2. Aircraft <i>safety devices</i> are checked in accordance with relevant <i>technical publications and manuals</i> 1.3. Correct <i>SMS component</i> is visually identified for inspection, testing and troubleshooting 1.4. Appropriate tools and ground support equipment are selected in accordance with the task
2. Inspect SMS component	2.1. <i>Firing devices</i> are <i>checked</i> and removed if fitted 2.2. SMS component is inspected in accordance with technical publications and manuals 2.3. Aircraft is <i>prepared</i> for testing and troubleshooting of SMS component in accordance with technical publications and manuals
3. Test and troubleshoot SMS component	3.1. SMS component is functionally tested in accordance with applicable technical publications and manuals for evidence of serviceability or malfunction

ELEMENT	PERFORMANCE CRITERIA
	3.2.SMS component faults are identified in accordance with technical publications and manuals 3.3.Specialist advice is obtained when required to assist with the troubleshooting process 3.4.Corrective action is taken in accordance with technical publications and manuals
4. Complete and process documentation	4.1.Applicable documentation is completed for SMS component inspection, testing and troubleshooting 4.2. Completed documentation is forwarded to Maintenance Control Section (MCS)

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying all safety procedures relating to aircraft SMS
- applying hand skills and use of applicable maintenance manuals in removal and installation of SMS components
- using ground support equipment and test equipment
- applying logic processes, taking and interpreting measurements, using test equipment and appropriate documentation and manuals to isolate SMS malfunctions
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- explosive ordnance handling
- manual handling of SMS components

Required knowledge

Look for evidence that confirms knowledge of:

- the aircraft operating and maintenance environment
- aircraft SMS and interfaces with other aircraft systems
- occupational health and safety (OHS) procedures and policies
- SMS and component test procedures
- explosive ordnance safety and handling procedures
- technical publications and manuals

REQUIRED SKILLS AND KNOWLEDGE

- hardware and component attachment methods
- technical documentation procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot SMS and system components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft SMS and system component inspection, testing and troubleshooting activities. It is essential that assessment confirms the ability to comply with organisational safety requirements and appropriate legislative and regulatory requirements while maintaining SMS systems. The ability to work safely within an explosive ordnance environment, conduct applicable tests and maintain relevant documentation is critical, including checking specifically for:

- failure to check aircraft safety devices are installed
- failure to ensure firing devices checked and removed if fitted
- commencing task prior to initiating documentation
- failure to comply with relevant OHS procedures and policies.

Evidence of transferability of skills and knowledge related to SMS and system component inspection, testing and troubleshooting is essential. This is to be established through demonstration of the ability to:

- render the system safe
- perform relevant inspections and tests
- troubleshoot faults and perform appropriate rectification action.

EVIDENCE GUIDE	
	The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a range of inspection, testing and troubleshooting tasks involving the SMS components listed in Groups 1 to 4 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed on aircraft and/or simulator using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	In addition to evidence provided in the Log of Industrial Experience assessment methods may include questioning and observation in operational or simulated environments. The unit may be assessed independently or in conjunction with unit MEA605A Inspect, test and troubleshoot aircraft stores suspension system and components.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

RANGE STATEMENT	
regional contexts) may also be included.	
Task verification	Verified may include: • maintenance restrictions • aircraft tail number • aircraft entered as unserviceable • nil stores fitted
Documentation	Documentation may include: • EE500 • CAMM2 documents • SMS documentation
Safety devices	Safety devices may include: • earth lead • aircraft safety pins • aircraft switches
Technical publications and manuals	Technical publications and manuals may include: • aircraft publications • maintenance instruction manuals and process specifications • servicing or service bulletins or structural repair manuals • illustrated parts catalogues, aircraft wiring manuals or drawings • tooling, equipment or manufacturer's manuals • standard practices • enterprise aviation regulations and publications
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
SMS component	SMS components may include: 1. Mission computer 2. Armament computer 3. Encoder/decoder 4. Control unit
Firing devices and checking	Firing devices may include:

RANGE STATEMENT	
	• stores release cartridges • chaff and flares • gun system • missiles • loaded stores Checked may include: • visually • physically
Aircraft preparation	Prepared may include: • panels opened • ground support equipment and test equipment connected
Specialist advice	Specialist advice may be obtained from: • subject matter experts • manufacturer • systems program office
Corrective action	Corrective action may include: • repair • component replacement
Applicable	Applicable may include: • aircraft documentation • SMS component documentation
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	Aviation maintenance

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MEA605A Inspect, test and troubleshoot aircraft stores suspension systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency is part of the Armament Certificate IV training pathway. It covers the competencies required to inspect, test and troubleshoot aircraft stores suspension systems (SSS) and components. The unit was developed from Australian Defence Force Enterprise unit DDDRARM402A Inspect, test and troubleshoot aircraft stores suspension systems and components and is equivalent to that unit.

Application of the Unit

Application of the unit	This unit applies to members of the Australian Defence Force who are required to apply explosive ordnance safety and handling procedures, hand skills and the use of maintenance documentation/publications in the inspection, testing and troubleshooting of SSS and components. The unit applies to all aircraft fitted with stores suspension systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA603A	Remove and install aircraft stores suspension systems and components

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to inspect, test and troubleshoot aircraft SSS and components	1.1. The task is <i>verified</i> from applicable <i>documentation</i> 1.2. Aircraft <i>safety devices</i> are checked in accordance with relevant <i>technical publications and manuals</i> 1.3. Correct <i>SSS component</i> is visually identified for inspection, testing and troubleshooting 1.4. Appropriate tools and ground support equipment are selected in accordance with the task
2. Inspect SSS component	2.1. <i>Firing devices</i> are <i>checked</i> and removed if fitted 2.2. SSS component is inspected in accordance with technical publications and manuals 2.3. Aircraft is <i>prepared</i> for testing and troubleshooting of SSS component in accordance with technical publications and manuals
3. Test and troubleshoot SSS component	3.1. SSS component is functionally tested in accordance with applicable technical publications and manuals for evidence of serviceability or malfunction

ELEMENT	PERFORMANCE CRITERIA
	3.2. SSS component faults are identified in accordance with technical publications and manuals 3.3. Specialist advice is obtained when required to assist with the troubleshooting process 3.4. Corrective action is taken in accordance with technical publications and manuals
4. Complete and process documentation	4.1. Applicable documentation is completed for SSS component inspection, testing and troubleshooting 4.2. Completed documentation is forwarded to Maintenance Control Section (MCS)

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- applying all safety procedures relating to aircraft SSS
- applying hand skills in removal and installation of SSS components
- using ground support equipment and test equipment
- applying system and component knowledge and logical fault finding procedures and applicable maintenance data in the troubleshooting of SSS and component faults
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- explosive ordnance safety and handling procedures
- manual handling of SMS components

Required knowledge

Look for evidence that confirms knowledge of:

- the aircraft operating and maintenance environment
- aircraft SSS and component operation and interfaces with other aircraft systems
- hardware and component attachment methods
- occupational health and safety (OHS) procedures and policies
- explosive ordnance safety and handling procedures
- technical publications and manuals

REQUIRED SKILLS AND KNOWLEDGE

- technical documentation procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to inspect, test and troubleshoot SSS and components while observing all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of aircraft SSS and system component inspection, testing and troubleshooting activities. It is essential that assessment confirms the ability to comply with organisational safety requirements and appropriate legislative and regulatory requirements while maintaining SSS. The ability to work safely within an explosive ordnance environment, conduct applicable tests and maintain relevant documentation is critical, including checking specifically for:

- failure to check aircraft safety devices are installed
- failure to ensure firing devices checked and removed if fitted
- commencing task prior to initiating documentation
- failure to comply with relevant OHS procedures and policies.

Evidence of transferability of skills and knowledge related to SSS and component inspection, testing and troubleshooting is essential. This is to be established through demonstration of the ability to:

- render the system safe
- perform relevant inspections and tests
- troubleshoot faults and perform appropriate rectification action.

The work plan should take account of applicable safety and quality requirements in accordance with the industry

EVIDENCE GUIDE	
	and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a range of inspection, testing and troubleshooting tasks involving the SSS components listed in Groups 1 to 3 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed on aircraft and/or simulator using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	In addition to evidence provided in the Log of Industrial Experience assessment methods may include questioning and observation in operational or simulated environments. The unit may be assessed independently or in conjunction with unit MEA604A Inspect, test and troubleshoot aircraft stores management system and components.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Task verification	Verified may include: • maintenance restrictions • aircraft tail number • aircraft entered as unserviceable • nil stores fitted
Documentation	Documentation may include: • EE500 • CAMM2 documents • SMS documentation
Safety devices	Safety devices may include: • earth lead • aircraft safety pins • aircraft switches
Technical publications and manuals	Technical publications and manuals may include: • aircraft publications • maintenance instruction manuals and process specifications • servicing or service bulletins or structural repair manuals • illustrated parts catalogues, aircraft wiring manuals or drawings • tooling, equipment or manufacturer's manuals • standard practices • enterprise aviation regulations and publications
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
SSS component	SSS components may include: 1. Bomb release unit 2. Pylon 3. Missile launcher
Firing devices and checking	Firing devices may include: • stores release cartridges • chaff and flares • gun system

RANGE STATEMENT	
	- missiles - loaded stores Checked may include: - visually - physically
Aircraft preparation	Prepared may include: - panels opened - GSE and test equipment connected
Specialist advice	Specialist advice may be obtained from: - subject matter experts - manufacturer - systems program office
Corrective action	Corrective action may include: - repair - component replacement
Applicable	Applicable may include: - aircraft documentation - stores suspension system component documentation
Application	Application of this unit may relate to: - scheduled or unscheduled maintenance activities - individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		

AURV229749A Prepare spray painting materials and equipment

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to prepare spray painting materials and equipment for use.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirements, preparation for work, preparation of paint for spray guns, preparation of guns and associated equipment, and completion of work finalisation processes, including clean-up and documentation. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including method and material type. 1.2. Job specifications are read and interpreted. 1.3. Occupational health and safety (OHS) requirements, including personal protection needs, are observed throughout the work. 1.4. Materials are selected and inspected for quality. 1.5. Hand, power tooling and safety equipment are identified and checked for operation. 1.6. Procedures are determined to minimise waste material. 1.7. Procedures are identified for maximising energy efficiency while completing the job.
2. Prepare paint for spray gun(s)	2.1. Information is accessed and interpreted from manufacturer/ component supplier specifications. 2.2. Paints are mixed to conform to specification for type and colour, viscosity and temperature. 2.3. A test card is used for comparison of colour and texture. 2.4. Preparation activities are carried out according to

ELEMENT	PERFORMANCE CRITERIA
	industry regulations/guidelines, OHS requirements, legislation and enterprise procedures/policies. 2.5. Paint is prepared without causing damage to component or system. 2.6. Waste materials are stored and/or disposed of in accordance with statutory and enterprise requirements.
3. Prepare spray gun(s) for spraying	3.1. Information is accessed and interpreted from manufacturer/ component supplier specifications. 3.2. Preparation, maintenance and adjustment of spray painting equipment conforms to requirements of manufacturer/component supplier specifications. 3.3. Preparation activities are carried out according to industry regulations/guidelines, OHS requirements, legislation and enterprise procedures/policies. 3.4. Spray guns are prepared without causing damage to component or system.
4. Clean up work area and maintain equipment	4.1. Material that can be reused is collected and stored. 4.2. Waste and scrap is removed following workplace procedures. 4.3. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 4.4. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures. 4.5. Operator maintenance is completed in accordance with manufacturer/component supplier specifications and worksite procedures. 4.6. Tooling is maintained in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Required skills include:

- collect, organise and understand information related to work orders, plans and safety procedures for preparing spray painting material and equipment
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and material to avoid backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to calculate time, apply accurate measurements, calculate material requirements and establish quality checks
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and wastage
- use workplace technology related to the preparation of spray painting material and equipment, including the use of specialist tooling, measuring equipment and communication devices and the reporting/documenting of results

Required knowledge

Required knowledge includes:

- OHS cleaning materials, equipment, material and personal safety requirements
- environmental protection requirements
- material storage, handling and disposal/material safety data sheets
- types of paints, including acrylic lacquers, solids, clear over base, air dry and polyurethane, and two component systems
- paint application methods
- spray guns and their application
- manufacturer/component supplier specifications for spray gun set-up and maintenance
- equipment preparation procedures
- paint mixing techniques
- paint drying methods
- work organisation and planning processes
- enterprise quality processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- applying environmental procedures
- preparing automotive paint to specifications
- preparing spray guns and associated equipment to manufacturer/component supplier requirements.

Context of, and specific resources for assessment

- Application of competence is to be assessed in the workplace or simulated worksite.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with regulatory requirements, including Australian Standards.
- The following resources should be made available:
 - workplace location or simulated workplace
 - material relevant to the preparation of spray painting material and equipment
 - equipment, hand and power tooling appropriate to the preparation of spray painting material and equipment
 - activities covering mandatory task requirements
 - specifications and work instructions.

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of AUR05 Automotive Industry Retail, Service and Repair Training Package.
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge.

EVIDENCE GUIDE

	• Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies. • Assessment may be applied under project-related conditions and require evidence of process. • Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Methods

Methods are to include:

- spray gun techniques
- various spraying techniques
- drying procedures
- paint mixing methods
- paint straining methods
- paint thinning methods

RANGE STATEMENT	
OHS	OHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include: • protective clothing and equipment • use of tooling and equipment • workplace environment and safety • handling of material • use of firefighting equipment • enterprise first aid • hazard control and hazardous material and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to: • operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and worksite visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to: • emergency shutdown and stopping of equipment • extinguishing fires • enterprise first aid requirements • worksite evacuation
Environmental requirements	Environmental requirements are to include, but are not limited to: • waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to: • regulations, including Australian standards • internal company quality policies and

RANGE STATEMENT	
	standards • enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include: • federal, state/territory and local authorities administering Acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include: • tinting machines • microfiche, scales • air-operated agitators • hand paddles • mixing banks • spray gun stem strainers • funnel strainers • mesh strainers • nylon stocking weave • vacuum paint strainers • viscosity measuring equipment • high-volume low-pressure spray guns • gravity feed spray guns • suction feed spray guns • pressure regulators • air compressors • spray booths • baking ovens • heating and lighting systems
Materials	Materials may include: • acrylic lacquers • air dry synthetic enamels • two-pack urethane acrylic enamels • metallic two-pack enamels • clear acrylic lacquers • metallic acrylic lacquers • pearl finishes • water-based finishes • paint thinners and paint reducers
Communications	Communications are to include, but are not limited to:

RANGE STATEMENT	
	verbal and visual instructions and fault reporting and may include worksite specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: - verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets (MSDS), diagrams or sketches - safe work procedures related to the preparation of spray painting material and equipment - regulatory/legislative requirements pertaining to automotive painting and finishing - engineer's design specifications and instructions - organisation work specifications and requirements - instructions issued by authorised enterprise or external persons - Australian standards

Unit Sector(s)

Unit sector	Vehicle body

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURV231208A Carry out trimming of vehicle components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to measure, cut, fabricate and attach material covers to vehicle components.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirements, preparation for work, matching, measuring, cutting, fabricating and attaching of material covers to vehicle components, and completion of work finalisation processes, including clean-up and documentation. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including method, process and equipment. 1.2. Job specifications are read and interpreted. 1.3. Occupational health and safety (OHS) requirements, including personal safety needs, are observed throughout the work. 1.4. Equipment and tooling are identified and checked for safe and effective operation. 1.5. Procedures are determined to minimise task time.
2. Match material	2.1. Information is accessed and interpreted from manufacturer/ component supplier specifications. 2.2. Matching procedures are carried out in accordance with manufacturer/component supplier specifications. 2.3. Matching procedures are completed within established industry enterprise guidelines. 2.4. Activities are carried out according to industry regulations/ guidelines, OHS requirements, legislation and enterprise procedures/policies.

ELEMENT	PERFORMANCE CRITERIA
3. Measure and cut material	3.1.Information is accessed and interpreted from manufacturer/ component supplier specifications. 3.2.Measuring and cutting procedures are carried out in accordance with manufacturer/component supplier specifications. 3.3.Measuring and cutting procedures are completed within established industry enterprise guidelines. 3.4.Activities are carried out according to industry regulations/ guidelines, OHS requirements, legislation and enterprise procedures/policies.
4. Fabricate trim/covers to suit vehicle/ components	4.1.Information is accessed and interpreted from manufacturer/ component supplier specifications. 4.2.Trim/cover fabrication procedures are carried out in accordance with manufacturer/component supplier specifications. 4.3.Fabrication procedures are completed within established industry enterprise guidelines. 4.4.Activities are carried out according to industry regulations/guidelines, OHS requirements, legislation and enterprise procedures/policies.
5. Attach material cover to vehicle/component	5.1.Information is accessed and interpreted from manufacturer/ component supplier specifications. 5.2.Attaching procedures are carried out in accordance with manufacturer/component supplier specifications. 5.3.Attaching procedures are completed within established industry/enterprise guidelines. 5.4.Activities are carried out according to industry regulations/ guidelines, OHS requirements, legislation and enterprise procedures/policies.
6. Clean up work area and maintain equipment	6.1.Material that can be reused is collected and stored. 6.2.Waste and scrap is removed following workplace procedure. 6.3.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 6.4.Unserviceable equipment is tagged and faults identified in accordance with workplace requirements. 6.5.Operator maintenance is completed in accordance with manufacturer/component supplier

ELEMENT	PERFORMANCE CRITERIA
	specifications and worksite procedures. 6.6. Tooling and equipment is maintained in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- collect, organise and understand information related to work orders, plans and safety procedures for trimming of vehicle components
- technical literacy and communication skills sufficient to interpret and apply common industry terminology, and interpret technical information and specifications
- research and interpretive skills to locate, interpret and apply operational and safety information
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
- plain English literacy and communication skills in relation to dealing with others involved in the work
- questioning and active listening skills, for example when obtaining information regarding trimming requirements
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and material to avoid backtracking or workflow interruptions
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to complete tests and measurements to determine trimming requirements
- use pre-checking and inspection techniques to anticipate planning and scheduling problems, avoid wastage of time and material
- manipulative and dexterity skills to perform trimming activities
- problem-solving skills for a range of differing procedural issues
- use workplace technology related to carrying out trimming of vehicle components, including the use of specialist tooling, measuring equipment and communication

REQUIRED SKILLS AND KNOWLEDGE

devices and the reporting/documenting of results

Required knowledge

Required knowledge includes:

- OHS cleaning materials, equipment, material and personal safety requirements
- removal and replacement methods
- measuring/testing and adjustment procedures
- technical and legal requirements
- manufacturer/component supplier/company policies
- types and uses of various materials
- trim fabrication, matching, measuring and cutting procedures
- use of tooling and equipment
- work organisation and planning processes
- enterprise quality processes

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- fabricating covers/trims
- repairing material covers/trims
- replacing material covers/trims
- adjusting material covers/trims

EVIDENCE GUIDE	
	• completing workplace records.
Context of, and specific resources for assessment	• Application of competence is to be assessed in the workplace or simulated worksite. • Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints. • Assessment is to comply with regulatory requirements, including Australian Standards. • The following resources should be made available: • workplace location or simulated workplace • material relevant to carrying out trimming of vehicle components • equipment, hand and power tooling appropriate to carrying out trimming of vehicle components • activities covering mandatory task requirements • specifications and work instructions.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of AUR05 Automotive Industry Retail, Service and Repair Training Package. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies. • Assessment may be applied under project-related conditions and require evidence of process. • Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Trimming methods	Trimming methods are to include: • sewing, gluing, riveting, cutting, forming and stapling
Vehicles	Vehicles may include: • marine craft aircraft • light and heavy vehicles and equipment
OHS	OHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include: • protective clothing and equipment • use of tooling and equipment • workplace environment and safety • handling of material • use of firefighting equipment • enterprise first aid • hazard control and hazardous material and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to: • operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in

RANGE STATEMENT	
	proximity to others and worksite visitors.
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to: • emergency shutdown and stopping of equipment • extinguishing fires • enterprise first aid requirements • worksite evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to: • regulations, including Australian standards • internal company quality policies and standards • enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include: • federal, state/territory and local authorities administering Acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include: • hand tooling • power/air tooling • specialist tooling for dismantling/assembly • staple gun • hammers • wad punches • heat gun • foam cutter • scissors and knives • revolving hole punch • ruler and tape • hand clamps • adhesive gun • pop rivet kit • punch and die set • hog ring pliers

RANGE STATEMENT	
	• door handle remover • hacksaw • sander • staple and tack remover • scrapers and putty knives • stuffing irons • vacuum formers
Materials	Materials may include: • fabrics and cleaning materials
Communications	Communications are to include, but are not limited to: • verbal and visual instructions and fault reporting and may include worksite specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets (MSDS), diagrams or sketches • Safe work procedures related to carrying out trimming of vehicle components • Regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules • Engineer's design specifications and instructions • Organisation work specifications and requirements • Instructions issued by authorised enterprise or external persons • Australian standards

Unit Sector(s)

Unit sector	Vehicle body

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURV231268A Select and apply trim/fabric materials and determine attachment methods

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to select trim/fabric materials and determine methods of attaching trim/fabric materials.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirements, preparation for work, selection of trim/fabric material for specific applications, selection of the methods of attachment of material to vehicle components, and completion of work finalisation processes, including clean-up and documentation. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including method, process and equipment. 1.2. Job specifications are read and interpreted. 1.3. Occupational health and safety (OHS) requirements, including personal safety needs, are observed throughout the work. 1.4. Equipment and tooling are identified and checked for safe and effective operation. 1.5. Procedures are determined to minimise task time.
2. Select trim/fabric materials	2.1. Information is accessed and interpreted from manufacturer/ component supplier specifications. 2.2. Material applications and usages are compared with the job requirements. 2.3. The material selected is that which best meets the

ELEMENT	PERFORMANCE CRITERIA
	user requirement. 2.4. Activities are carried out according to industry regulations/ guidelines, OHS requirements, legislation and enterprise procedures/policies.
3. Determine attachment methods	3.1. Information is accessed and interpreted from manufacturer/ component supplier specifications. 3.2. Attachment options are identified and analysed. 3.3. Attachment option is selected. 3.4. Selected option is documented.
4. Clean up work area and maintain equipment	4.1. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 4.2. Operator maintenance is completed in accordance with manufacturer/component supplier specifications and worksite procedures. 4.3. Equipment is maintained in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- collect, organise and understand information related to work orders, plans and safety procedures for selection and application of trim/fabric materials
- technical literacy and communication skills sufficient to interpret and apply common industry terminology, and interpret technical information and specifications
- research and interpretive skills to locate, interpret and apply operational and safety information
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
- plain English literacy and communication skills in relation to dealing with others involved in the work

REQUIRED SKILLS AND KNOWLEDGE

- questioning and active listening skills, for example when obtaining information relating to selection and application of trim/fabric materials
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and material to avoid backtracking or workflow interruptions
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to complete tests and measurements to determine selection and application of trim/fabric materials
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and wastage
- use workplace technology related to selection and application of trim/fabric materials, including the use of measuring equipment, computerised technology and communication devices and the reporting/documenting of results

Required knowledge

Required knowledge includes:

- OHS cleaning materials, equipment, material and personal safety requirements
- manufacturer/component supplier/company specifications
- trim/fabric material types and their application
- selection procedures to determine trim/fabric material requirements
- methods of attachment of trim/fabric materials
- work organisation and planning processes
- enterprise quality processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

EVIDENCE GUIDE

unit	• observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • completing preparatory activity in a systematic manner • selecting trim/fabric materials for a range of specified jobs • determine attachment methods to be used for a range of specified jobs.
Context of, and specific resources for assessment	• Application of competence is to be assessed in the workplace or simulated worksite. • Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints. • Assessment is to comply with regulatory requirements, including Australian Standards. • The following resources should be made available: • workplace location or simulated workplace • materials relevant to selection and determination of attachment methods of trim/fabric materials • equipment, hand and power tooling appropriate to selection and determination of attachment methods of trim/fabric materials • activities covering mandatory task requirements • specifications and work instructions.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of AUR05 Automotive Industry Retail, Service and Repair Training Package. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies. • Assessment may be applied under project-related conditions and require evidence of process. • Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or

EVIDENCE GUIDE	
	other persons subject to agreed authentication arrangements. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Methods	Methods to be considered are to include: clamping, crimping, gluing and sewing
Trim/fabric materials	Trim/fabric materials may be attached to: - passenger/commercial vehicles - plant and agricultural equipment - recreational equipment - mining equipment - marine craft and aircraft
OHS	OHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include: - protective clothing and equipment - use of tooling and equipment - workplace environment and safety - handling of material - use of firefighting equipment - enterprise first aid - hazard control and hazardous material and

RANGE STATEMENT	
	substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to: operational risk assessment and treatments associated with electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and worksite visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to: - extinguishing fires - enterprise first aid requirements - worksite evacuation
Environmental requirements	Environmental requirements are to include but are not limited to: waste management and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to: - regulations, including Australian standards - internal company quality policies and standards - enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include: federal, state/territory and local authorities administering Acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include: computers
Materials	Materials may include: fabric and cleaning materials
Communications	Communications are to include, but are not limited to: verbal and visual instructions and may include

RANGE STATEMENT	
	worksite specific instructions, written instructions, plans or instructions related to job/task
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, catalogues, colour charts, vehicle details, material safety data sheets (MSDS), diagrams or sketches • regulatory/legislative requirements pertaining to trim/fabric materials • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian standards

Unit Sector(s)

Unit sector	Vehicle body

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURV231368A Select and apply trim/fabric adhesives

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to select, prepare and apply trim/fabric adhesives.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirements, preparation for work, selection, preparation and application of trim adhesives, and completion of work finalisation processes, including clean-up and documentation. This unit may be applied in relation to heavy vehicles, plant and agricultural equipment, recreational craft, mining equipment, marine craft and aircraft. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including method, process and equipment. 1.2. Job specifications are read and interpreted. 1.3. Occupational health and safety (OHS) requirements, including personal safety needs, are observed throughout the work. 1.4. Equipment and tooling are identified and checked for safe and effective operation. 1.5. Procedures are determined to minimise task time.
2. Select adhesive	2.1. Information is accessed and interpreted from manufacturer/component supplier specifications. 2.2. Adhesives are selected according to material type and adhesive produce/manufacturer/component supplier recommendations.

ELEMENT	PERFORMANCE CRITERIA
	2.3.Activities are carried out according to industry regulations/guidelines, OHS requirements, legislation and enterprise procedures/policies.
3. Prepare surfaces and apply adhesive	3.1.Information is accessed and interpreted from manufacturer/ component supplier specifications. 3.2.Adhesive surface preparation and application procedures are carried out in accordance with adhesive product/ manufacturer/component supplier specifications. 3.3.Work is completed without causing damage to component or system. 3.4.Activities are carried out according to industry regulations/ guidelines, OHS requirements, legislation and enterprise procedures/policies.
4. Clean up work area and maintain equipment	4.1.Material that can be reused is collected and stored. 4.2.Waste and scrap is removed following workplace procedure. 4.3.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 4.4.Unserviceable equipment is tagged and faults identified in accordance with workplace requirements. 4.5.Operator maintenance is completed in accordance with manufacturer/component supplier specifications and worksite procedures. 4.6.Tooling and equipment is maintained in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- collect, organise and understand information related to work orders, plans and safety procedures for selection, preparation and application of adhesives
- technical literacy and communication skills sufficient to interpret and apply

REQUIRED SKILLS AND KNOWLEDGE

- common industry terminology, and interpret technical information and specifications
- research and interpretive skills to locate, interpret and apply operational and safety information
 - communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
 - plain English literacy and communication skills in relation to dealing with others involved in the work
 - questioning and active listening skills, for example when obtaining information for selection, preparation and application of adhesives
 - plan and organise activities, including preparation and layout of worksite and obtaining of equipment and material to avoid backtracking or workflow interruptions
 - work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
 - use mathematical ideas and techniques to complete tests and measurements to determine selection, preparation and application of adhesives
 - use pre-checking and inspection techniques to anticipate planning and scheduling problems, avoid wastage of time and material
 - manipulative and dexterity skills to perform the preparation and application of adhesives
 - problem-solving skills for a range of differing procedural issues
 - use workplace technology related to selection and application of trim/fabric adhesives, including the use of specialist tooling and equipment, measuring equipment and communication devices and the reporting/documenting of results

Required knowledge

Required knowledge includes:

- OHS cleaning materials, equipment, material and personal safety requirements
- technical information
- product safety requirements
- manufacturer/component supplier/company policies
- adhesive types and their application
- adhesive selection, preparation and application procedures
- work organisation and planning processes
- enterprise quality processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- selecting and applying a range of trim/fabric adhesives
- completing workplace records.

Context of, and specific resources for assessment

- Application of competence is to be assessed in the workplace or simulated worksite.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with regulatory requirements, including Australian Standards.
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials relevant to selection and application of trim/fabric adhesives
 - equipment, hand and power tooling appropriate to selection and application of trim/fabric adhesives
 - activities covering mandatory task requirements
 - specifications and work instructions.

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of AUR05 Automotive Industry Retail, Service and Repair Training Package.
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge.
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also

EVIDENCE GUIDE

	reinforce the integration of key competencies. • Assessment may be applied under project-related conditions and require evidence of process. • Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Adhesive surface components	Adhesive surface components may include: • glass components • mouldings/trim • mirrors • weather shields • body components and panels • foam, fibreglass and trim fabrics
OHS	OHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This

RANGE STATEMENT	
	may include: • protective clothing and equipment • use of tooling and equipment • workplace environment and safety • handling of material • use of firefighting equipment • enterprise first aid • hazard control and hazardous material and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to: • operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and worksite visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to: • emergency shutdown and stopping of equipment • extinguishing fires • enterprise first aid requirements • worksite evacuation
Environmental requirements	Environmental requirements are to include, but are not limited to: • waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to: • regulations, including Australian standards • internal company quality policies and standards • enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include:

RANGE STATEMENT	
	federal, state/territory and local authorities administering Acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include: - hand tooling - power/air tooling - cleaning equipment - sealing equipment - cutting equipment
Materials	Materials may include: adhesives, solvents, resins and cleaning materials
Communications	Communications are to include, but are not limited to: verbal and visual instructions and fault reporting and may include worksite specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: - verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets (MSDS), diagrams or sketches - safe work procedures related to selection and application of trim/fabric adhesives - regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules - engineer's design specifications and instructions - organisation work specifications and requirements - instructions issued by authorised enterprise or external persons - Australian standards

Unit Sector(s)

Unit sector	Vehicle body

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURV329603DA Apply air dry and polyurethane enamel refinishing materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to apply air dry and polyurethane enamel refinishing materials to a variety of vehicle substrates by spray gun application and determine causes and rectification procedures for paint finish faults.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, application of materials, the rectification of faults and completion of work finalisation processes, including clean-up and documentation. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine the job requirements, including job sheets, material type, colour, quality and quantity. 1.2. Job specifications are read and interpreted. 1.3. OH&S requirements, including personal protection needs, breathing apparatus and full body protection, are observed throughout the work. 1.4. Materials are selected and inspected for quality. 1.5. Hand tooling and safety equipment are identified and checked for operation. 1.6. Procedures are determined to minimise waste material. 1.7. Procedures are identified for maximising energy efficiency while completing the job.
2. Identify paint faults,	2.1. Paint faults are identified according to industry and

ELEMENT	PERFORMANCE CRITERIA
causes and rectification procedures	workplace procedures. 2.2.Paint fault causes are determined according to industry and workplace procedures. 2.3.Rectification procedures are determined according to fault and type of finish material according to industry standard practices and workplace requirements. 2.4.Identification and determination activities are carried out according to industry regulations/guidelines, OH&S legislation, and enterprise procedures/policies.
3. Apply air dry and polyurethane enamel refinishing materials by spray gun	3.1.The environment for application of refinishing materials conforms to requirements for temperature, extraction of fumes and cleanliness. 3.2.Refinishing materials are applied at manufacturer/ component supplier recommended intervals using approved methods. 3.3.Refinishing materials are dried using approved methods and equipment. 3.4.Refinishing materials are applied without causing damage to any component or system. 3.5.The finish produced meets specifications for colour, texture, depth and gloss and is contaminant-free. 3.6.Surface refinishing is completed within approved timeframes. 3.7.Application activities are carried out according to industry regulations/guidelines, OH&S legislation, and enterprise procedures/policies.
4. Clean up work area and maintain equipment	4.1.Material that can be reused is collected and stored. 4.2.Waste material is removed and disposed of or stored according to statutory and workplace procedure. 4.3.Spray equipment is cleaned as specified by manufacturer/ component supplier and/or workplace policy and procedures. 4.4.Work area is cleaned and inspected for serviceable condition in accordance with workplace procedures. 4.5.Unserviceable equipment is tagged and faults identified in accordance with workplace procedures. 4.6.Operator maintenance is completed in accordance with manufacturer/component supplier specifications and worksite procedures. 4.7.Tooling is maintained in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to work orders, plans and safety procedures for applying air dry and polyurethane enamel refinishing materials
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and materials to avoid backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to calculate time, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to application of air dry and polyurethane enamel refinishing materials, including the use of specialist equipment, measuring equipment and communication devices and the reporting/recording of results

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- environmental protection requirements/substance disposal and storage requirements
- material safety data sheets
- types of air dry and polyurethane enamel refinishing materials
- application methods
- paint surface fault identification and rectification procedures
- drying methods for air dry and polyurethane enamel refinishing material
- types of spray guns
- spray gun operation and spraying techniques
- spray gun cleaning methods

REQUIRED SKILLS AND KNOWLEDGE

- work organisation and planning processes
- enterprise quality processes

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- preparing air dry and polyurethane enamel paint
- applying a range of air dry and polyurethane enamel refinishing materials
- identifying paint faults and determining rectification faults
- rectifying faults
- applying environmental procedures.

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite.

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.

Assessment is to comply with regulatory requirements, including Australian Standards. The following resources should be made available:

- workplace location or simulated workplace
- materials relevant to application of air dry and polyurethane enamel refinishing materials

EVIDENCE GUIDE	
	• equipment, hand and power tooling appropriate to application of air dry and polyurethane enamel refinishing materials • activities covering mandatory task requirements • specifications and work instructions.
Method of assessment	• Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies. • Assessment may be applied under project related conditions and require evidence of process. • Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on

RANGE STATEMENT	
the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Paint types	Paint types are to include air dry synthetic enamels, enamel additives, two-pack polyurethane acrylic enamels, urethane additives and paint reducers.
Methods	Methods are to include: • spray gun selection, various spraying techniques, drying procedures, paint mixing • polishing and detailing of surfaces.
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices.
Safe operating procedures	Safe operating procedures are to include, but are not limited to operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and worksite visitors.
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and worksite evacuation.
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management.
Quality requirements	Quality requirements are to include, but are not

RANGE STATEMENT	
	limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures.
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice.
Tooling and equipment	Tooling and equipment may include various spray guns, air pressure regulators, air compressors, spray booths, baking ovens, heating and lighting systems, strainers, masking equipment and safety equipment.
Materials	Materials may include rags, tac rags, cleaning solvents and cleaning materials.
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include worksite specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers.
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to application of air dry and polyurethane enamel refinishing materials • regulatory/legislative requirements pertaining to automotive painting and finishing • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards.

Unit Sector(s)

Unit sector	Vehicle body

Co-requisite units

Co-requisite units		

Competency field

Competency field	

BSBMGT504A Manage budgets and financial plans

Modification History

Not applicable.

Unit Descriptor

This unit covers all of the significant aspects of financial management for operational managers who are not financial specialists. It emphasises the preparation of users of budgets/financial plans through communication and training and consistent surveillance over budget performance, with early intervention where required.

Consider co-assessment with BSBMGT503A Prepare budgets and financial plans.

This unit covers all of the significant aspects of financial management for operational managers who are not financial specialists. It emphasises the preparation of users of budgets/financial plans through communication and training and consistent surveillance over budget performance, with early intervention where required.

Consider co-assessment with BSBMGT503A Prepare budgets and financial plans.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Communicate budget and financial plans	1.1 Budget/financial plan communication package reviewed by finance specialists 1.2 Package is amended/revised where appropriate 1.3 Training activities are undertaken with users of the budget and plans across the organisation 1.4 All data and terms are defined and understood by the users of the plans 1.5 Communication outcomes are tested to ensure clear understanding of objectives, processes and accountabilities
2 Monitor and control activities against plans	2.1 Delegations and budget accountabilities are confirmed in writing prior to budget period 2.2 Funds are allocated in accordance with budget objectives and parameters 2.3 Recording systems and documentation meet all audit requirements and legal obligations 2.4 Risk management plans are implemented and contingency plans in place for all financial plans 2.5 Performance is monitored and variances identified on a real time basis 2.6 Variances are analysed in conjunction with relevant experts to determine cause and effect 2.7 Remedial action is taken swiftly to minimise negative impact and maximise benefits 2.8 Budgets and plans are renegotiated/restructured where necessary to optimise organisational performance
3 Report outcomes of financial plans	3.1 Records of financial performance are properly maintained within organisational systems 3.2 Financial performance is analysed and reported in a

form and language appropriate to the audience

- 3.3 Non financial objectives are reported in the context of overall organisational performance
- 3.4 Strategies and plans are reviewed and updated to optimise organisational performance

Required Skills and Knowledge

Not applicable.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competence for this unit. This is an integral part of the assessment of competence and should be read in conjunction with the Range Statement.

Critical Aspects of Evidence

Evidence must cover all aspects of business operations in which financial management and decision-making occurs. Period activities relating to revenue expenditure and cash flow management, as well as capital expenditure proposals and capital budgeting, must be incorporated into the assessment

The role of the operational manager as a communicator and trainer in respect to the implementation of the budget needs, also must be integrated into the overall assessment, along with regular and quality reporting of budget performance

Evidence of analysis of budget performance and follow up action

OHS considerations may include:

establishment and maintenance of OHS records

assessment of OHS performance in financial and non-financial terms

Underpinning Knowledge*

*At this level the learner must demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas.

Relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination

Financial planning within the organisation

Budgeting

Organisation's objectives and plans (strategic, tactical and operational)

Consultative methods and processes

Capital investment evaluation techniques

Performance measurement

Organisation roles in respect to financial delegations, accountabilities and responsibilities

Standards for organisational record-keeping and audit requirements

Underpinning Skills

Financial planning skills to develop formal estimates of reviews, costs, cash flows and logistic requirements

Communication and training skills to ensure team members and other managers understand the budget/financial planning objectives and processes

Risk management skills to assess probability and consequences of any potential negative event

Analysis skills to interpret positive and negative variances from budget/plan, determine the reasons therefore, and identify potential actions to remediate the situation

Systems management skills to ensure financial performance records are collected, maintained and properly reported

Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities

Resource Implications

The learner and trainer should have access to appropriate documentation and resources normally used in the workplace

Consistency of Performance

In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations

Context/s of Assessment

Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement

Assessment must take account of the endorsed assessment guidelines in the Business Services Training Package

Assessment of performance requirements in this unit should be undertaken in an actual workplace or simulated environment

Assessment should reinforce the integration of the key competencies and the business services common competencies for the particular AQF level. Refer to the Key Competency Levels at the end of this unit

Key Competency Levels

Collecting, analysing and organising information (Level 3) - to monitor budget performance

Communicating ideas and information (Level 3) - to ensure the budget and its impact on people is understood

Planning and organising activities (Level 3) - to train users in the elements of the budget which affect them

Working with teams and others (Level 3) - to review budget performance

Using mathematical ideas and techniques (Level 2) - to measure budget performance, calculate variances and present outcomes

Solving problems (Level 3) - to maintain operations within budget

Using technology (Level 2) - to manage budget performance and develop performance reports

Please refer to the Assessment Guidelines for advice on how to use the Key Competencies

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competence for this unit. This is an integral part of the assessment of competence and should be read in conjunction with the Range Statement.

Critical Aspects of Evidence

Evidence must cover all aspects of business operations in which financial management and decision-making occurs. Period activities relating to revenue expenditure and cash flow management, as well as capital expenditure proposals and capital budgeting, must be incorporated into the assessment

The role of the operational manager as a communicator and trainer in respect to the implementation of the budget needs, also must be integrated into the overall assessment, along with regular and quality reporting of budget performance

Evidence of analysis of budget performance and follow up action

OHS considerations may include:

establishment and maintenance of OHS records

assessment of OHS performance in financial and non-financial terms

Underpinning Knowledge*

*At this level the learner must demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas.

Relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination

Financial planning within the organisation

Budgeting

Organisation's objectives and plans (strategic, tactical and operational)

Consultative methods and processes

Capital investment evaluation techniques

Performance measurement

Organisation roles in respect to financial delegations, accountabilities and responsibilities

Standards for organisational record-keeping and audit requirements

Underpinning Skills

Financial planning skills to develop formal estimates of reviews, costs, cash flows and logistic requirements

Communication and training skills to ensure team members and other managers understand the budget/financial planning objectives and processes

Risk management skills to assess probability and consequences of any potential negative event

Analysis skills to interpret positive and negative variances from budget/plan, determine the reasons therefore, and identify potential actions to remediate the situation

Systems management skills to ensure financial performance records are collected, maintained and properly reported

Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities

Resource Implications

The learner and trainer should have access to appropriate documentation and resources normally used in the workplace

Consistency of Performance

In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations

Context/s of Assessment

Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement

Assessment must take account of the endorsed assessment guidelines in the Business Services Training Package

Assessment of performance requirements in this unit should be undertaken in an actual workplace or simulated environment

Assessment should reinforce the integration of the key competencies and the business services common competencies for the particular AQF level. Refer to the Key Competency Levels at the end of this unit

Key Competency Levels

Collecting, analysing and organising information (Level 3) - to monitor budget performance

Communicating ideas and information (Level 3) - to ensure the budget and its impact on people is understood

Planning and organising activities (Level 3) - to train users in the elements of the budget which affect them

Working with teams and others (Level 3) - to review budget performance

Using mathematical ideas and techniques (Level 2) - to measure budget performance, calculate variances and present outcomes

Solving problems (Level 3) - to maintain operations within budget

Using technology (Level 2) - to manage budget performance and develop performance reports

Please refer to the Assessment Guidelines for advice on how to use the Key Competencies

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competence, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Legislation, codes and national standards relevant to the workplace which may include:

award and enterprise agreements and relevant industrial instruments

relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination

relevant industry codes of practice

Training activities may include:

small group discussions

informal meetings

formal, structured competency standards/training

tele and video conferencing

e-learning

Delegations and budget accountabilities may include:

monitoring expenditure

authorising expenditure within limits

reporting on variances to budget/plan

taking remedial action within budget authority

Audit requirements refer to:

the internal standards required in the management of budgets and financial plans, approved by external/internal auditors

Risk management means:

the process of identification of potential negative events and the development of plans to mitigate or minimise the likelihood of the negative event occurring and/or the consequences in the event it does occur

Real time refers to:

on-line, instantaneous monitoring of performance/activities

Appropriate non financial objectives may include:

environmental

OHS

quality

market share

customer service

security or any other key result area

The Range Statement provides advice to interpret the scope and context of this unit of competence, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Legislation, codes and national standards relevant to the workplace which may include:

award and enterprise agreements and relevant industrial instruments

relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination

relevant industry codes of practice

Training activities may include:

small group discussions

informal meetings

formal, structured competency standards/training

tele and video conferencing

e-learning

Delegations and budget accountabilities may include:

monitoring expenditure

authorising expenditure within limits

reporting on variances to budget/plan

taking remedial action within budget authority

Audit requirements refer to:

the internal standards required in the management of budgets and financial plans, approved by external/internal auditors

Risk management means:

the process of identification of potential negative events and the development of plans to mitigate or minimise the likelihood of the negative event occurring and/or the consequences in the event it does occur

Real time refers to:

on-line, instantaneous monitoring of performance/activities

Appropriate non financial objectives may include:

environmental

OHS

quality

market share

customer service

security or any other key result area

Unit Sector(s)

Not applicable.

Modification History

Not Available

INTRODUCTION

Unit Descriptor This unit covers the competency to measure out and cut single layer fabrics.

ELEMENT**PERFORMANCE CRITERIA**

1 Plan work operations

Required fabrics, number of items to be cut and required equipment are identified

Fabric sizes to be cut are identified from work order plus any required allowances

OH&S requirements, including ergonomic criteria and personal protection needs, are observed throughout the work.

Suitable work area is selected, tidied and cleaned of any contaminants

- Suitable scissors and or blades are selected and checked prior to use for appropriate sharpness, set, operation and safe condition
- Fabrics are selected in accordance with work order and laid out smooth and square
- 2 Prepare materials for cutting
 - Fabrics are inspected for flaws and appropriate finish
 - Naps, direction, pattern matches and face of the materials are identified
 - Tools and equipment are checked for operation
 - 3 Complete cutting operations
 - Cutting is completed with cut out materials identified/labelled where required
 - Any measurements for pleat lines, hems, headings and any special seam allowances are marked out using workplace approved methods
 - Where required, fabrics are hung using appropriate protective covers and care label information is attached
 - Cut lengths are dispatched to next process following workplace procedures
 - Unused materials are stored as required
 - Workplace required documentation is completed following appropriate procedures
 - Work area is cleaned and damaged tools tagged as required
 - Waste is collected and bundled for recycling/reuse as required

RANGE STATEMENT

The Range Statement provides advice to interpret the scope and context of this unit of competency, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Single layer fabrics	• Single layer fabrics. This unit applies to soft furnishings and upholstered items cut from measurements and instructions, and does not apply to cutting from patterns •

Unit context	• OH&S requirements may include legislation, building codes, material safety management systems, hazardous and dangerous goods codes and local safe operating procedures or equivalent • Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements • Work requires individuals to demonstrate some discretion, judgement and problem solving skills in the set up and operation of machines. This may be demonstrated either individually or in a team environment •
Workplace environment	• Work may be performed in workplaces which are involved in the manufacture of soft furnishings and upholstered furniture and in the repair and restoration of furnishing products •
Tools and equipment	• Tools and equipment may include, but are not limited to: cutting equipment, including scissors and cutting machines; measuring and calculating equipment, including tapes, rulers, calculators and computers •
Products	• Products to be constructed may include, but are not limited to: curtains, drapes, swags, cushions and upholstered furniture components •
Personal protective equipment	• Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices •
Information and procedures	• Machine manufacturers' specifications and operational procedures • Workplace procedures relating to the setting and operation of machinery • Work instructions, including job sheets, cutting lists, plans, drawings and designs • Workplace procedures relating to reporting and communication •

EVIDENCE GUIDE

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Range Statement.

Critical Aspects of Evidence	• Interpret work order and locate and apply relevant information • Apply safe handling practices for equipment, products and materials • Identify materials used and any special marking out requirements • Measure accurately and cut fabric quantities to minimise waste and produce consistent quality items for at least five different types of material or product • Follow work instructions, operating procedures and inspection practices to: • prevent damage to goods, equipment or products • maintain required production output and product quality • minimise the risk of injury to self or others • Work effectively with others • Modify activities to cater for variations in workplace contexts and environment
Underpinning Knowledge	• Work requirements, including workplace standards • Fabric types, common faults and inspection procedures • Design features of the finished items in relation to attractive use of fabric patterns • Cutting equipment and techniques • The impact of cutting on fabrics
Underpinning Skills	• Information. Collect, organise and understand information related to work orders, basic plans and safety procedures • Communication. Communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems • Planning. Plan and organise activities, including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage • Teamwork. Work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity • Mathematical ideas and techniques. Use mathematical ideas and techniques to correctly complete measurements and estimate fabric requirements and other material requirements • Solve problems. Use pre-checking and inspection techniques to anticipate cutting problems, avoid reworking and avoid wastage • Use of technology. Use the limited workplace technology related to cutting, including tools, equipment, calculators and measuring devices.

Resource Implications	Work orders, fabrics, including linings and interlinings, calculator and where available other workplace calculating and cutting equipment.
Method of Assessment	Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of tasks and questioning on underpinning knowledge. Assessment should be conducted over time and will generally be in conjunction with assessment of other units of competency.
Context of Assessment	Assessment may occur on the job or in a workplace simulated facility with relevant equipment, materials, work instructions and deadlines.

KEY COMPETENCY LEVELS

NB: These levels do not relate to the Australian Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

There are three levels available:

- Level 1 where work is within set conditions and process
- Level 2 where the management or facilitation of conditions or process is exercised; and
- Level 3 where the design and/or development of conditions or process is required

Collect, analyse and organise information	Communicate ideas and information	Plan and organise activities	Work with others and in teams	Use mathematical ideas and techniques	Solve problems	Use technology
Level 1	Level 1	Level 1	Level 1	Level 1	Level 1	Level 1

Modification History

Not Available

INTRODUCTION

Unit Descriptor This unit covers the competency to use sewing machines for production of soft furnishings, mattresses and bases, and upholstered furniture.

ELEMENT

PERFORMANCE CRITERIA

- 1 Identify sewing machine equipment controls and procedures

Job requirements are identified from work instructions

OH&S requirements, including ergonomic criteria and personal protection needs, are observed throughout the work

Equipment components, equipment condition and controls are identified

Operating procedures are checked to identify any approved adjustments

Equipment operations and production procedures are identified

The process for obtaining materials and moving products to the next process is identified

- 2 Prepare for work

Work order or sample is checked to identify sewing specifications

Required materials, tools and equipment are assembled

Materials and equipment are inspected and any faults are identified and reported

Work sequence is planned to suit job, and materials are laid out

If required, naps, pattern direction and face side of materials are identified

Components are matched and secured with tacking, pins or adhesives as required

Any required supplementary equipment is identified for

- routine lubrication and adjustments
- 3 Set up and control sewing machine operations
 - Sewing machine is set up and adjusted
 - Sewing operation is according to workplace procedures and material characteristics
 - Required product quality and outputs are maintained
 - 4 Maintain quality requirements
 - Machining process is monitored and conditions which may affect work quality are reported
 - Authorised changes in operating procedures are implemented
 - 5 Finish and dispatch work
 - Completed work is:
 - checked for required quality
 - finished as required
 - repaired (where applicable)
 - moved to the next process
 - Material which is able to be reused is collected and stored
 - Equipment and work area clean up and waste management are completed following workplace procedures
 - Workplace records are completed as required

RANGE STATEMENT

The Range Statement provides advice to interpret the scope and context of this unit of competency, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

- Sewing specifications
 - Sewing specifications include: required materials, threads and additional work features; seam and stitch specifications, and any special stitch requirements and allowances; shape characteristics and special requirements; needles, attachments and ancillary equipment and quality requirements

	•
Sewing products	• Sewing products include: top stitching, gathering, piping, braid, fringe, flange cords, straight fabric lengths, padded material, loose covers
	•
Sewing processes	• Sewing processes may include: hemming, seams, machine tacking, gathering, multiple-layer sewing and straight or zig zag sewing
	•
Unit context	• OH&S requirements may include legislation, building codes, material safety management systems, hazardous and dangerous goods codes and local safe operating procedures or equivalent • Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements • Work requires individuals to demonstrate some discretion, judgement and problem solving skills in the set up and operation of machines. This may be demonstrated either individually or in a team environment
	•
Machines	• Machines may include, but are not limited to: single or multi-needle flat bed, overlocker, blind hemming, gathering, flange, bar tacking, tape edging
	•
Sewing machine set up and adjustment	• Sewing machine set up and adjustment includes: thread machine and wind bobbin as required, set required tensions, select required machine settings, and test operations for work order requirements
	•
Materials	• Materials to be machined may include but are not limited to: plain
	•
Personal protective equipment	• Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices
	•
Information and procedures	• Machine manufacturers' specifications and operational procedures • Workplace procedures relating to the setting and operation of machinery • Work instructions, including job sheets, plans, drawings and designs • Workplace procedures relating to reporting and communication • The employee completes quality inspection of own work
	•

EVIDENCE GUIDE

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Range Statement.

Critical Aspects of Evidence	• Apply safe handling practices for equipment, products and materials, including personal protective equipment • Identify and operate three types of industrial sewing machines as identified in the Range of Variables • Set up sewing machine for operations and monitor quality of output • Interpret work order and locate and apply relevant information • Follow work instructions, operating procedures and inspection practices to: • prevent damage to goods, equipment or products • maintain required production output and product quality • minimise the risk of injury to self or others • Work effectively with others • Modify activities to cater for variations in workplace contexts and environment • Identify safe handling of equipment, products and materials
Underpinning Knowledge	• The types, characteristics, uses and limitations of sewing machines • Characteristics of materials used and finished products • Safety and environmental aspects of sewing machine operations • Quality systems and standards • Workflow requirements for sewing process • Operation of work systems and industrial sewing equipment • Causes of faults and repair methods • Procedure for reporting damaged or imperfect products or interruptions to workflow •
Underpinning Skills	• Information. Collect, organise and understand information related to work orders, basic plans and safety procedures • Communication. Communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems • Planning. Plan and organise activities, including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage

	• Teamwork. Work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity • Mathematical ideas and techniques. Use mathematical ideas and techniques to correctly complete measurements and estimate material requirements • Solve problems. Use pre-checking and inspection techniques to anticipate sewing problems, avoid reworking and avoid wastage • Use of technology. Use the workplace technology related to the sewing of materials, including tools, equipment and measuring devices •
Resource Implications	Appropriate industrial sewing machines, work orders, operating procedures, materials and threads.
Method of Assessment	Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of tasks and questioning on underpinning knowledge. Assessment should be conducted over time and will generally be in conjunction with assessment of other units of competency.
Context of Assessment	Assessment may occur on the job or in a workplace simulated facility with relevant process equipment, materials, work instructions and deadlines.

KEY COMPETENCY LEVELS

NB: These levels do not relate to the Australian Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

There are three levels available:

- Level 1 where work is within set conditions and process
- Level 2 where the management or facilitation of conditions or process is exercised; and
- Level 3 where the design and/or development of conditions or process is required

Collect, analyse and organise information	Communicate ideas and information	Plan and organise activities	Work with others and in teams	Work with others and in teams	Solve problems	Use technology
Level 1	Level 1	Level 2	Level 1	Level 1	Level 2	Level 2

Modification History

Not Available

INTRODUCTION

Unit Descriptor This unit covers the competency to use marine sewing techniques in the completion of upholstery products/items.

ELEMENT PERFORMANCE CRITERIA

- 1. Prepare for work**

Job requirements are identified from work instructions

Workplace health and safety requirements, including personal protection needs, are observed throughout the work

Machines, attachments, materials, work method and sequence are determined

Equipment, including any supplementary equipment, is identified and checked for safe operation, components and controls

Materials are identified and inspected and problems, including any materials or part constructed products which do not meet the job order requirements, are identified and reported in accordance with workplace procedures

Work pieces are laid out in sequence in accordance with specifications and workplace procedures
- 2. Conduct sewing operation**

Sewing machine (including attachments as required), set up requirements and adjustments are observed in accordance with workplace procedures

Appropriate thread type and size is fitted to machine

Machine is operated to maintain required product quality and outputs

Reinforcing/protective measures, fittings/attachments and fixing devices are attached in accordance with workplace procedures

Finished products are inspected for quality with unacceptable items being reprocessed in accordance with workplace instructions

3. Complete work

Unused materials are stored as required

Workplace required documentation, including stock usage, is completed and processed following workplace procedures

Work area is cleaned and damaged tools and equipment tagged as required

Waste is collected and bundled for recycling/reuse as required by workplace procedures

RANGE STATEMENT

The Range Statement provides advice to interpret the scope and context of this unit of competency, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Marine sewing and installation techniques	• This unit addresses the sewing techniques used to sew materials used in marine application and to fit the required attachments and fixing devices • Fittings/attachments and fixing devices include: clips, press studs, buckles, eyelets, shackles, zips, reinforcing patches, straps • Suitable installation methods are used with consideration to suitability or products used in the process •
Unit context	• Workplace health and safety includes OH&S legislation, material safety management systems, hazardous substances and dangerous goods codes and safe operating procedures • Work requires individuals to demonstrate discretion, judgement and problem solving skills in the application of marine sewing techniques • Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual

	handling procedures and organisation insurance requirements
Job requirements	• Job requirements may include: required materials, threads, additional work features, shape and special requirements for the item, and any required workplace documentation to be completed
Machines	• Machines may include, but are not limited to: overlocker, flat bed, twin needle and walking foot
Tools and equipment	• Tools and equipment may include: measuring tape, scissors, cutting blades, knives and thread
Materials	• Materials to be sewn may include but are not limited to: canvas, sail materials, leather, foam-backed vinyl and upholstery fabrics
Personal protective equipment	• Personal protective equipment is to include that prescribed under legislation, regulations and enterprise practices and procedures. It may include: safety glasses/goggles, hair nets, ear muffs/plugs, gloves, footwear, protective clothing and breathing apparatus
Information and procedures	• Machine manufacturers' specifications and operational procedures • Workplace procedures relating to the setting and operation of machines • Work instructions, including job sheets, plans, drawings and designs • Workplace procedures relating to reporting and communication

EVIDENCE GUIDE

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Range Statement.

Critical Aspects of Evidence	• Interpret work order and locate and apply relevant information • Identify and select materials used and any special handling requirements for those materials • Follow work instructions, operating procedures and inspection practices to: • prevent damage to goods, equipment or products

- maintain required production output and product quality
- minimise the risk of injury to self or others

As a minimum:

- prepare and install a minimum of 3 square metres of cover to at least 3 vertical or horizontal surfaces
- sew at least three covers
- sew appropriate fasteners and attachments to covers sewn
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

Underpinning Knowledge

- Procedure for reporting damaged or imperfect products or interruption to workflow
- Workflow requirements for sewing process
- Operation of work systems and sewing equipment
- Characteristics of materials used and application and requirements of the finished products
- Causes of faults and repair methods
- Identification of equipment, processes and procedures
- Quality systems and standards
- Workplace procedures

Underpinning Skills

- Information. Collect, organise and understand information related to work orders, basic plans, and safety procedures
- Communication. Communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with work supervisor, other workers and customers, and the reporting of work outcomes and problems
- Planning. Plan and organise activities including the preparation and layout of the work area and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage
- Teamwork. Work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- Mathematical ideas and techniques. Use mathematical ideas and techniques to correctly complete measurements, calculate work requirements, optimise component and material sizes for economical cutting and assemble required materials
- Solve problems. Use pre-checking and inspection techniques to plan work, avoiding reworking and wastage
- Use of technology. Use the workplace technology related to the application of marine sewing and application techniques
-

Resource Implications Appropriate sewing machine, work orders, operating procedures, materials, fittings and threads.

Method of Assessment Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.

Assessment should be by direct observation of tasks and questioning on underpinning knowledge.

Assessment should be conducted over time and may be in conjunction with assessment of other units of competency which form a part of the job role.

Context of Assessment Assessment may occur on the job or in a workplace simulated facility with relevant process equipment, materials, work instructions and deadlines.

KEY COMPETENCY LEVELS

NB: These levels do not relate to the Australian Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

There are three levels available:

- Level 1 where work is within set conditions and process
- Level 2 where the management or facilitation of conditions or process is exercised; and
- Level 3 where the design and/or development of conditions or process is required

Collect, analyse and organise information	Communicate ideas and information	Plan and organise activities	Work with others and in teams	Use mathematical ideas and techniques	Solve problems	Use technology
Level 2	Level 2	Level 2	Level 2	Level 2	Level 2	Level 2

Modification History

Not Available

INTRODUCTION

FIELD: PRODUCTION

This unit covers the skills required to select and safely use adhesives on canvas and sail products.

ELEMENT

PERFORMANCE CRITERIA

1. Preparation of work area	a. Safe working environment is established b. Suitable electrical power outlets are identified, if required c. Work is planned to maximise safety and productivity
2. Tool selection, use and storage	a. Appropriate hand tools, power tools and electrical equipment are selected for the work to be performed b. Tools are examined for damage, missing components or other defects (including frayed power cords where applicable) c. Extension power cables are checked for knots and insulation damage d. Electrical tools are connected safely to power supply e. Safety equipment is used during tool operation in accordance with OH&S requirements f. Tasks are performed using tools in accordance with safe working practices g. Tools are located in a safe position when not in use h. Tools and extension cords are cleaned and stored in accordance with industry and enterprise safe working practices
3. Selection of adhesives and preparation for their use	a. Nature of materials to be joined is determined b. Appropriate adhesives are selected c. Appropriate tools and materials are selected for

- preparation of workpiece surfaces and application of adhesive
 - d. Adhesive manufacturer's OH&S requirements are checked and prescribed precautions taken before adhesives are used
 - e. Adhesive is prepared to manufacturer's specification
- 4. Application of adhesive and bonding of materials
 - a. Workpiece surfaces are prepared for application of adhesive
 - b. Workpiece surfaces to be bonded are anchored or otherwise stabilised
 - c. Adhesive is applied in accordance with recommended practice and surfaces are joined
 - d. Joins are allowed to cure for specified time
 - e. Where appropriate, heat to assist in curing the joins is applied to the workpiece in accordance with safe working practice
- 5. Inspection and rectification
 - a. Workpiece is removed and joins are inspected and tested for strength to ensure they meet specification
 - b. Appropriate action is taken regarding rework or rectification, if necessary
- 6. Clean up and documentation
 - a. Product is prepared for storage or dispatch as required
 - b. Work area is cleaned and tools and equipment are cleaned and stored in accordance with safe working practice
 - c. Remaining adhesive is safely disposed of or stored in a safe, secure location
 - d. Work records are completed in accordance with enterprise requirements

RANGE OF VARIABLES

VARIABLE

SCOPE

- 1. General context
 - a. Work may be undertaken either individually or in a team environment and may require the exercise of discretion and

- judgement
 - b. Work may involve interaction with other people in the workplace including supervisors and production personnel and consultation with customers
 - c. Work is assessed in accordance with statutory requirements, enterprise insurance requirements, OH&S legislation, manual handling procedures and relevant health regulations
 - d. Work is generally performed under moderate supervision and subject to review by supervisors
2. Worksite environment and practices may include
- a. Work conducted in a variety of environments, such as:
 - a.1. operational indoor workplaces
 - a.2. operational outdoor workplaces
 - a.3. hazardous or exposed conditions
 - b. Work undertaken in accordance with established procedures on a range of products
 - c. Establishment of a safe working environment requirements including:
 - c.1. provision of adequate ventilation
 - c.2. elimination of hazardous conditions such as naked flames or other sources of ignition
 - c.3. cleared working area to allow workpieces and materials to be set out
 - d. Use of hand and power tools normally applicable to the tasks involved, including:
 - d.1. glue/adhesive applicators, abrasive materials
 - d.2. power tools such as spray guns, portable ventilation fans, hot air dryers, heat lamps
 - e. Normal operator maintenance of tools and equipment including clearing and cleaning of spray guns
 - f. Exposure to chemicals or hazardous substances
 - g. Completion of job and product records and other relevant documentation
 - h. Interaction with other workplace personnel
3. Sources of information and documents may include
- a. Manufacturers' specifications and instructions regarding use of adhesives and application equipment
 - b. Enterprise work orders and instructions
 - c. Industry codes and symbols
 - d. Australian and enterprise quality standards and procedures
 - e. Product change policies and procedures
 - f. Enterprise or external personnel

- g. Work scheduling documentation
 - h. Job procedures
- 4. Workplace context may include
 - a. Work organisation procedures and practices relating to the bonding of materials with adhesives
 - b. Standard work practices, including:
 - b.1. safe use of adhesive application tools and equipment
 - b.2. storage, handling and disposal of adhesives, solvents and associated materials
 - c. Reporting actions which include verbal and written communication in accordance with enterprise policies and procedures
 - d. Oral, written or visual communication including completion of standard forms, interpretation of information and instructions associated with workplace activities, and recording and reporting of work outcomes
 - e. Quality requirements determined by customer, enterprise, and application of Australian and international standards
 - f. Being responsible for the maintenance of own work quality and being required to contribute to the quality improvement of team or section output, where necessary
 - g. Procedures for safety, environmental protection, housekeeping and quality as specified by equipment and materials manufacturers, regulatory authorities and the enterprise
 - h. Conditions of service, legislation and industrial agreements including:
 - h.1. workplace agreements and awards
 - h.2. Federal or State/Territory legislation
- 5. Applicable regulations and legislation may include
 - a. Occupational health and safety legislation relevant to workplace activities
 - b. Workers' compensation legislation
 - c. Environment protection legislation

EVIDENCE GUIDE

- 1. Critical aspects of evidence to be
 - a. Assessment must confirm appropriate knowledge and skills to:
 - a.1. comply with all relevant safety requirements including safe

- considered
- use of adhesives, solvents, hand and power tools and electrical equipment
 - a.2. interpret work orders
 - a.3. interpret equipment and materials specifications, and instructions applicable to the use of adhesives
 - a.4. prepare product to be bonded and set up adhesive application equipment
 - a.5. perform bonding process
 - a.6. perform normal operator maintenance of work area to enable work to be conducted safely and efficiently
 - a.7. document and communicate work related information including reporting of faults and other problems
2. Interdependent assessment of units
- a. Competence in this unit is not dependent on possession of competence in any other units. The unit may therefore be assessed independently
3. Required knowledge and skills
- a. Underpinning knowledge of:
 - a.1. precautions and safe working practices based on relevant OH&S legislation, codes of practice, policies and procedures
 - a.2. health, fire and explosion hazards associated with the use of volatile or toxic adhesives and solvents, and specific OH&S requirements regarding their use, safe handling and storage
 - a.3. the range of canvas products used in the industry
 - a.4. bonding principles and techniques
 - a.5. a wide range of glues, adhesives and solvents used and their specifications and appropriateness for particular applications
 - a.6. curing characteristics of various adhesives and the effects of atmospheric conditions
 - a.7. relevant quality standards for bonding processes
 - a.8. safety and environmental requirements of relevant industry and enterprise procedures
 - a.9. general housekeeping policies and procedures
 - a.10. recording and reporting procedures
 - b. Underpinning skills to:
 - b.1. interpret and apply work instructions and established procedures
 - b.2. locate and interpret technical information about canvas products, adhesives and equipment used in bonding processes

- b.3. use relevant hand and power tools
 - b.4. use relevant chemicals and cleaning agents and dispose of waste products
 - b.5. maintain work area
 - b.6. apply all relevant safety practices
 - b.7. communicate effectively within the workplace
 - b.8. document and transfer information
- 4. Resource implications
 - a. Access is required to real or appropriately simulated situations involving the bonding of canvas products
 - b. Access is required to information on specifications of materials used in bonding, relevant safety procedures and regulations, quality standards, and enterprise procedures
 - c. Access is required to all necessary facilities, tools, materials and associated equipment, including relevant hand tools and power tools
- 5. Consistency in performance
 - a. Applies underpinning knowledge and skills when:
 - a.1. establishing plans
 - a.2. describing procedures and consequences
 - a.3. completing tasks
 - a.4. identifying problems and faults
 - a.5. applying safety precautions relevant to the task
 - b. Shows evidence of application of relevant workplace procedures including:
 - b.1. hazard policies and procedures including codes of practice
 - b.2. job procedures and work instructions
 - b.3. quality procedures
 - b.4. security procedures
 - b.5. waste, pollution and recycling management procedures
 - c. Actions are implemented promptly and accidents and incidents reported in accordance with statutory requirements and enterprise procedures
 - d. Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions among staff and others
 - e. Work is completed systematically with attention to detail without damage to products, equipment or personnel
 - f. Competence is assessed on sufficient number of occasions or over sufficient period of time to ensure consistent performance across a typical range of canvas products and adhesives

6. Context for assessment
- a. Assessment may occur on the job or in an industry approved simulated environment
 - b. Competence should be demonstrated with a wide range of typical industry canvas products and adhesives
 - c. Competency in this unit should be assessed in a holistic manner

KEY COMPETENCY LEVELS

Collect, Analyse & Organise Information	Communicate Ideas & Information	Plan & Organise Activities	Work with Others & in Teams	Use Mathematical Ideas & Techniques	Solve Problems	Use Technology
Level 2	Level 1	Level 2	Level 2	Level 1	Level 2	Level 2

LMTTF2008A Use adhesives

Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to select and safely use adhesives on canvas and sail products.

Application of the Unit

Application of the Unit This unit applies to the bonding of materials with adhesives on canvas and sail products. Work may be conducted in a variety of environments, such as:

- operational indoor workplaces
- operational outdoor workplaces
- hazardous or exposed conditions

Work may be conducted in small to large scale enterprises and may involve individual and team activities. Work is performed within defined procedures under direct supervision.

The application of this unit is according to OHS practices of the enterprise and workplace practices, which may include:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- standard operating procedures
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control and recycling

This unit requires the application of skills associated with planning and organising for the safe and effective use of adhesives and textile fabrication technology. This unit also requires communication skills

to read and apply workplace information and complete work records.
Self management skills are applied to ensure workplace and quality standards are achieved.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare work area	1.1 Safe working environment is established 1.2 Suitable electrical power outlets are identified, if required 1.3 Work is sequenced to maximise safety and productivity 1.4 Workplace procedures and instructions are read and interpreted
2 Select, use and store tools	2.1 Appropriate hand tools, power tools and electrical equipment are obtained for the work to be performed 2.2 Tools are examined for damage, missing components or other defects (including frayed power cords where applicable) 2.3 Extension power cables are checked for knots and insulation damage 2.4 Electrical tools are connected safely to power supply 2.5 Safety equipment is used during tool operation in accordance with OHS practices

ELEMENT	PERFORMANCE CRITERIA
3 Select adhesives and prepare for their use	2.6 Tasks are performed using tools in accordance with safe working practices
	2.7 Tools are located in a safe position when not in use
	2.8 Tools and extension cords are cleaned and stored in accordance with industry and enterprise safe working practices
	3.1 Nature of materials to be joined is ascertained
	3.2 Specified adhesives are obtained
4 Apply adhesive and bond materials	3.3 Appropriate tools and materials are selected for preparation of work piece surfaces and application of adhesive
	3.4 Adhesive manufacturer's OHS requirements are checked and prescribed precautions taken before adhesives are used
	3.5 Adhesive is prepared to manufacturer's instructions
	4.1 Work piece surfaces are prepared for application of adhesive
	4.2 Work piece surfaces to be bonded are anchored or otherwise stabilised
5 Inspect and rectify	4.3 Adhesive is applied in accordance with recommended practice and surfaces are joined
	4.4 Joins are allowed to cure for specified time
	4.5 Where appropriate, heat to assist in curing the joins is applied to the work piece in accordance with OHS practices
	4.6 Knowledge of using adhesives are applied to perform required tasks
	5.1 Work piece is removed and joins are informally inspected and tested for strength
6 Clean up and documentation	5.2 Results of informal inspection are verified by supervisor and appropriate action is taken regarding rework or rectification, if necessary
	6.1 Product is prepared for inspection
	6.2 Work area is cleaned and tools and equipment are cleaned and stored in accordance with OHS practices
	6.3 Remaining adhesive is safely disposed of or stored in a safe, secure location
	6.4 Work records are completed in accordance with workplace requirements

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Demonstrates knowledge of:

- health, fire and explosion hazards associated with the use of volatile or toxic adhesives and solvents, and specific OHS requirements regarding their use, safe handling and storage
- the range of canvas products in common use
- bonding principles and techniques
- commonly used glues, adhesives and solvents
- curing characteristics of commonly used adhesives and the effects of atmospheric conditions
- quality standards for bonding processes
- safety and environmental requirements of relevant industry and enterprise procedures
- general housekeeping policies and procedures
- OHS practices, including hazard identification and control measures
- quality practices
- workplace practices
- recording and reporting practices

Demonstrates skills to:

- locate and interpret technical information about canvas products, adhesives and equipment used in bonding processes
- use relevant hand and power tools
- use relevant chemicals and cleaning agents and dispose of waste products
- maintain work area
- read, interpret and follow information on work specifications, standard operating procedures and work instructions and other reference material
- maintain accurate records
- communicate within the workplace
- sequence operations
- meet specifications
- clarify and check task-related information
- carry out work according to OHS practices

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Critical aspects of evidence to be considered

Demonstrates skills and knowledge to:

- comply with all relevant safety requirements including safe use of adhesives, solvents, hand tools and electrical equipment
- follow work orders
- understand equipment and materials instructions applicable to the use of adhesives
- prepare product to be bonded and set up adhesive application equipment
- perform bonding process
- perform normal operator maintenance of work area to enable work to be conducted safely and efficiently
- document and communicate work related information including reporting of faults and other problems

Consistently applies skills and knowledge when:

- organising work
- completing tasks
- identifying improvements
- using workplace practices
- using OHS practices
- recording and reporting accidents and incidents
- assessing operational readiness of equipment used and work processes
- recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions
- completing work systematically with attention to detail without damage to goods and equipment

Context and specific resources for assessment

Assessment may occur on the job or in an appropriately simulated environment and requires access to work areas, materials and equipment, and to information on workplace practices and OHS practices.

Guidance information for assessment

This unit may be assessed independently or in combination with other relevant units.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative/regulatory requirements	All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.
Power tools may include	• spray guns • portable ventilation fans • hot air dryers • heat lamps
OHS practices	OHS practices must include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and may include: • manual handling techniques • standard operating procedures • personal protective equipment • safe materials handling • taking of rest breaks • ergonomic arrangement of workplaces • following marked walkways • safe storage of equipment • housekeeping • reporting accidents and incidents • other OHS practices relevant to the job and enterprise

Unit Sector(s)

Sector	Textile Fabrication

MEM08013B Prepare surfaces by abrasive blasting (advanced)

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers performing an advanced level of skill in surface preparation using abrasive blasting.

Application of the Unit

Application of the unit	This unit is designed to be used where an advanced level of skill is desired in surface preparation using abrasive blasting. The operation and maintenance of compressed air systems and associated items, including emergency shut-down procedures, is included. Work is undertaken autonomously or as part of a team environment using accepted standards for safety, quality and procedures. All work and work practices are undertaken to regulatory and legislative requirements. Band: A Unit Weight: 4

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	

Prerequisite units		
Path 1	MEM08012B	Prepare surfaces by abrasive blasting (basic)
	MEM08016B	Control blast coating by-products, materials and emissions
	MEM13003B	Work safely with industrial chemicals and materials

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Work requirements are determined from job sheet, instructions or other specifications in accordance with standard operating procedures. 1.2. Appropriate abrasive blasting process and equipment are selected to meet job specification. 1.3. Appropriate abrasive blasting media and equipment are selected to meet job specification. 1.4. Work site is prepared for surface cleaning activities.
2. Set up equipment	2.1. Appropriate equipment and any required

ELEMENT	PERFORMANCE CRITERIA
	consumables are assembled, set up and prepared correctly and safely in accordance with manufacturers' specifications and standard operating procedures. 2.2. Correct rust inhibitor for use in wet abrasive blast methods is selected where required. 2.3. Pre-operational checks are carried out on equipment and faults and are rectified or reported for further action.
3. Inspect surface prior to cleaning	3.1. Work piece is inspected prior to cleaning in accordance with standard operating procedures. 3.2. Identified faults/defects requiring remedial or pre-treatment action are reported as required.
4. Prepare surfaces using abrasive blasting	4.1. Blasting equipment is operated in accordance with standard operating procedures. 4.2. Emergency shut-down procedures can be carried out. 4.3. Work procedures are undertaken to appropriate environmental requirements. 4.4. Abrasive media disposal is carried out in accordance with standard operating procedures. 4.5. Blasting equipment is cleaned and disassembled and inspected in accordance with manufacturers' specifications and standard operating procedures. 4.6. Equipment faults are recorded and reported in accordance with standard operating procedures.
5. Inspect prepared surface	5.1. Surface preparation is assessed for cleanliness and conformance with specifications. 5.2. Faults or defects are rectified where required and inspection results are recorded and reported in accordance with standard operating procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- preparing and sequencing operational work plan
- selecting blasting process and equipment
- selecting appropriate blasting media
- setting up equipment
- undertaking surface inspection prior to cleaning
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures.
- following verbal instructions
- orally reporting routine information
- identifying faults and defects
- checking and clarifying task-related information
- checking for conformance to specifications

Required knowledge

Look for evidence that confirms knowledge of:

- calculations and numerical operations within the scope of this unit
- blasting media features
- equipment for the selected method
- inspection procedures
- procedures for using abrasive blasting equipment
- procedures for abrasive media disposal
- safe work practices and procedures
- hazards and control measures associated with preparing surfaces by abrasive blasting, including housekeeping

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to prepare surfaces by abrasive blasting (at an advanced level). Competency in this unit cannot be claimed until all prerequisites have been satisfied.

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with preparing surfaces by abrasive blasting (advanced) or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Blasting process	Wet, dry, vacuum automatic rotary, centrifugal and water blasting (including HP and UHP)
Blasting media	Garnet, ilmenite, slags, steel grit, steel shot, water, glass bead and soda
Equipment	Blast nozzles, compressors, blast and helmet ventilation, air hoses, blast pots, nozzles, safety equipment etc.

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units	

Competency field

Competency field	Surface finishing

MEM12001B Use comparison and basic measuring devices

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers sorting items using basic comparison measuring equipment, and maintaining the equipment.

Application of the Unit

Application of the unit	Measurements are conducted in a production environment or at a work station. Work is undertaken autonomously or as part of teamwork. All comparative measurements are undertaken to standard operating procedures and to regulatory and legislative requirements. Band: A Unit Weight: 2

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use comparison and/or basic measuring devices	1.1.Measuring devices are identified and used to undertake required comparisons or measurements using standard operating procedures. 1.2.Checking or sorting of items is undertaken using comparison and/or basic measuring device according to standard operating procedures.
2. Maintain comparison and/or basic measuring devices	2.1.Basic care and storage is maintained to manufacturers' standards or standard operating procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- using device in accordance with standard operating procedures
- storing and maintaining devices
- using basic numeracy skills for undertaking comparison measurements
- following oral instructions and written standard operating procedures

Required knowledge

Look for evidence that confirms knowledge of:

- use and application of various comparison or measurement devices
- procedures for the correct use of devices
- procedures for maintaining and storing devices
- hazards and control measures associated with conducting measurements, including housekeeping
- safe work practices and procedures

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to use comparison and basic measuring devices.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment

EVIDENCE GUIDE	
	should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with using comparison and basic measuring devices or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Basic measuring devices	Linear measuring devices measuring to within 1mm graduation - may include rules, tapes and retractable tapes
Comparisons	Comparison of length, angle, size, temperature, pressure, weight, voltage, resistance and amperage

RANGE STATEMENT**Comparison measuring devices**

Go/no-go devices, thread angle and taper gauges, temperature gauges, pressure gauges, measuring gauges and overlay indicators, templates, digital devices and pre-set verniers and micrometers

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field**Competency field**

Measurement

MEM30007A Select common engineering materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers recognising common materials used in engineering, assisting in the selection of a material for a specific application, and using test results to evaluate the properties of materials.

Application of the Unit

Application of the unit	This unit applies to technician level activities in manufacturing and engineering environments. Work is carried out under supervision. Band: 0 Unit Weight: 0

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify common engineering materials by their principal properties	1.1. The principal properties of ferrous and non-ferrous metals are identified. 1.2. The principal properties of thermosetting and thermoplastic polymers are identified. 1.3. The principal properties of ceramics and composite materials are identified. 1.4. The effects of different types of bonding in materials are identified. 1.5. The effects of mechanical and thermal processes on the principal properties of materials are identified.
2. Select materials for specific applications	2.1. The engineering requirement for the specific application is determined in consultation with others. 2.2. Material is selected based on the requirement and consideration of principal properties and further processing. 2.3. Selection is confirmed according to standard operating procedures.
3. Verify selected material as fit for purpose	3.1. Appropriate tests for the required properties are identified. 3.2. Testing of materials is arranged with appropriate persons, if necessary. 3.3. Test results are analysed and material choices are

ELEMENT	PERFORMANCE CRITERIA
	confirmed or modified as appropriate.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- undertaking research
- selecting/carrying out tests appropriate to the material
- communicating
- documenting
- planning and sequencing operations
- reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents

Required knowledge

Look for evidence that confirms knowledge of:

- classification of materials:
 - metals and non-metals
 - ferrous and non-ferrous metals
 - polymers (thermoplastics, thermosetting and elastomers)
 - ceramics
 - composite materials
- structure of materials
- physical properties of materials:
 - electrical conductivity/resistivity
 - specific gravity/density
 - thermal conductivity/expansion
 - specific heat
 - melting/boiling points
- magnetic properties
- optical properties
- mechanical properties:

REQUIRED SKILLS AND KNOWLEDGE

- strength - yield, tensile, compressive
- stress/strain data
- hardness
- toughness (impact and slow strain)
- elasticity
- plasticity
- ductility
- malleability
- fatigue
- creep
- chemical properties:
 - corrosion of metals, corrosion processes, mechanisms
 - degradation of polymers
- materials testing methods - destructive testing and applications:
 - tensile
 - compressive
 - shear
 - torsion
 - hardness
 - impact
 - fatigue
 - creep
 - visual
 - corrosion testing
- engineering materials
- engineering applications of ferrous metals:
 - cast irons
 - carbon and alloy steels
 - stainless steels
- engineering applications of non-ferrous metals:
 - aluminium and its alloys
 - copper, brass and bronze
 - nickel alloys, zinc, titanium
 - magnesium
 - refractory metals
- engineering applications of polymers:
 - thermosetting polymers
 - thermoplastic polymers

REQUIRED SKILLS AND KNOWLEDGE

- ceramics and glasses
- effects of mechanical and thermal processes on the properties of materials:
 - casting
 - forging, rolling and extrusion
 - cold forming
 - powder processes
 - heat treatment
 - joining - fasteners
 - soldering
 - brazing
 - welding
 - adhesives
 - finishing - coatings, metallic and non-metallic
- hazards and control measure associated with selecting common engineering materials, including housekeeping
- safe work practices and procedures

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to select common engineering materials.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this

EVIDENCE GUIDE	
	unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with selecting common engineering materials, or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning should not require language, literacy and numeracy skills beyond those required in this unit. The candidate must have access to all tools, equipment, materials and documentation required and must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Common engineering materials	Includes ferrous metals, cast irons, carbon and alloy steels, stainless steels, coated steels, non-ferrous metals, aluminium and its alloys, copper and its alloys, nickel alloys, zinc, titanium, magnesium, refractory metals, polymers,

RANGE STATEMENT	
	thermosetting polymers, thermoplastic polymers, ceramics and glasses
Appropriate tests	Tests which can be undertaken by a technician within the organisation as well as those required to be undertaken by external organisations, including simple tests
Required properties	Properties to be tested include tensile strength, compression, shear characteristics, torsion, hardness, impact resistance, fatigue resistance, creep resistance, visual appearance and colour, magnetic properties, corrosion resistance
Appropriate persons	Internal technicians and/or external organisations

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

Competency field

Competency field	Engineering technician

MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers applies the <i>concepts of mathematics</i> to appropriate and simple engineering situations within the individual's area of engineering expertise.

Application of the Unit

Application of the unit	This unit applies to technician level work that requires basic algebraic, trigonometric and statistical knowledge and skill. Band: 0 Unit Weight: 4

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use concepts of arithmetic in the solution of engineering problems	1.1.Units of physical quantities are converted to facilitate engineering calculations. 1.2.Calculations are performed to solve problems involving rational and irrational numbers. 1.3.Scientific notation is used to represent numbers. 1.4.Calculations are checked for reasonableness using estimating and approximating techniques.
2. Solve engineering problems involving algebraic expressions with one independent variable	2.1.Algebraic expressions are manipulated using mathematical operations in their correct order.
3. Use two-dimensional geometry to solve practical problems	3.1.Angles expressed in degrees are correctly converted to radians and vice versa. 3.2.The perimeter, area, length and angles of a range of two-dimensional figures are correctly calculated. 3.3.The volume and surface area of complex figures are correctly calculated. 3.4.Points identified in terms of cartesian coordinates can be converted to polar coordinates and vice versa.
4. Use trigonometry to solve practical	4.1.Basic trigonometry functions are used to calculate the lengths of the sides of right-angled triangles.

ELEMENT	PERFORMANCE CRITERIA
problems	4.2. Inverse trigonometry functions are used to determine angles in a right-angled triangle given the lengths of two sides. 4.3. The sine rule is used to determine the lengths of the sides of acute and obtuse angled triangles given one side and two angles. 4.4. The cosine rule is used to determine the lengths of the sides of acute and obtuse angled triangles given two sides and one angle.
5. Graph linear functions	5.1. Linear functions are solved graphically and equations of straight lines are determined from the slope and one point, or two points. 5.2. Two linear functions are solved simultaneously both algebraically and geometrically. 5.3. The length and mid point of a line segment are determined.
6. Solve quadratic equations	6.1. Quadratic equations are solved. 6.2. Simultaneous linear and quadratic equations are solved.
7. Perform basic statistical calculations	7.1. Mean, median and mode are calculated from given data. 7.2. Standard deviation is calculated and interpreted employing graphical representation.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using and applying mathematical formulas:
 - logical thinking
 - problem solving
 - calculating
 - applying statistics

REQUIRED SKILLS AND KNOWLEDGE
• using computer numerical methods • drawing graphs
Required knowledge
Look for evidence that confirms knowledge of: • transposing and evaluating formulae • polynomials • straight line coordinate geometry • introduction to indices • introduction to trigonometry • circular functions • trigonometry of oblique triangles • trigonometric identities • introduction to functions and their graphs

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to apply mathematical skills and knowledge to simple engineering applications. Evidence from tasks and projects should/may be used to complement and demonstrate integration of competency.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic

EVIDENCE GUIDE	
	workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying mathematical concepts to engineering applications, or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Concepts of mathematics	Include arithmetic, algebraic expressions with one independent variable, two-dimensional geometry, trigonometry, linear functions, basic quadratic functions, basic statistical methods

RANGE STATEMENT	
Correct order	Refers to the correct procedure when expanding brackets, factorising algebraic expressions, factorising quadratic expressions, simplifying algebraic fractions, transposing formulae, solving simple one variable equations, finding the quotient and remainder given a linear division
Complex figures	May include cones, pyramids, spheres, frustums and intersections of figures singularly or in combination

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

Competency field

Competency field	Engineering technician

MSAENV272B Participate in environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively measure current resource use and carry out improvements including those reducing negative environmental impacts of work practices. This unit is based on the sustainability guideline standard GCSSUS01A Participate in environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to operators/team members who are required to follow procedures so as to work in an environmentally sustainable manner. This ensures regulatory compliance and also aims at minimising environmental risks and maximises the environmental performance of the process and the organisation. It includes: • Resources used • Potential environmental hazards • Improving environmental performance (within scope of competency and authority). This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an

	organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify current resource use and environmental issues.	1.1. Identify workplace <i>environmental and resource efficiency issues</i> . 1.2. Identify resources used in own work role. 1.3. <i>Measure</i> and record current usage of resources using <i>appropriate techniques</i> .

ELEMENT	PERFORMANCE CRITERIA
	1.4. Identify and report workplace environmental hazards to appropriate personnel.
2. Comply with environmental regulations.	2.1. Follow procedures to ensure compliance . 2.2. Report environmental incidents to appropriate personnel.
3. Seek opportunities to improve environmental practices and resource efficiency.	3.1. Follow enterprise plans to improve environmental practices and resource efficiency. 3.2. Make suggestions for improvements to workplace practices in own work area.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include the ability to:

- report as required by procedures
- follow procedures and instructions and respond to change
- ask questions and seek clarifications relating to work requirements

Reading and writing is required in order to interpret required procedures and complete required workplace forms/reports.

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Competency includes sufficient knowledge to:

- have a basic understanding of sustainability
- know the environmental hazards/risks, resource use and inefficiencies associated with own workplace (at an appropriate level)
- know the relevant environmental and resource efficiency systems and procedures for own work area
- know the impact of laws and regulations to a level relevant to the work context

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to follow workplace procedures according to instructions given and to participate in the improvement of environmental and resource efficient work practices at own level of responsibility. Evidence must be strictly relevant to the particular workplace role.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- identify and measure resources used in their job
- identify situations likely to lead to an environmental incident
- follow procedures related to environmental performance.

Consistent performance should be demonstrated. For example, look to see that:

- work is routinely to procedures
- the minimum of resources is used consistent with the job requirements, good practice and the procedures.

Context of and specific resources for assessment

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Depending on the selected methods of assessment access may be required to:

- workplace procedures and plans
- documentation in relation to production, waste, overheads, hazard control/management
- reports from supervisors/managers
- case study/scenarios

Method of assessment

A holistic approach should be taken to the assessment. Competence in this unit may be assessed:

- by demonstration in the workplace

EVIDENCE GUIDE	
	• using targeted questioning for appropriate portions • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures including all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include minimisation of environmental risks and maximisation of opportunities to improve business environmental performance and to promote more efficient production and consumption of natural resources, for example by: • minimisation of waste, through implementation of the waste management hierarchy

RANGE STATEMENT	
	• efficient and effective use of energy and other resources • seeking alternative sources of energy • efficient use of materials and appropriate disposal of waste • use of controls to minimise the risk of environmental damage from hazardous substances • efficient water use • reducing emissions • life cycle analysis applied to issues such as energy supply, materials, transport, production
Measure	Measure should be interpreted in a manner consistent with the scope of the job and may include things like: • counting the number of items entering/leaving a work area • reading indicators in the work area • obtaining relevant information from support personnel • other simple means
Appropriate techniques	Appropriate techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data.
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and mandated codes of practice. It also includes any codes and standards that the enterprise applies voluntarily.
Incidents	Incidents include: • breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance.
Enterprise plans	Enterprise plans include:

RANGE STATEMENT	
	• documented policies and procedures • work plans to minimise waste, increase efficiency of water/energy use, minimise environmental hazards
Suggestions	Suggestions include ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • improve energy efficiency • increase use of renewable, recyclable, reusable and recoverable resources • reduce waste • increasing the reusability/recyclability of wastes/products • reduce water usage and/or water wastage.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV472B Implement and monitor environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively analyse the workplace in relation to environmentally sustainable work practices and to implement improvements and monitor their effectiveness. This unit is based on the sustainability guideline standard GCSSUS02A Implement and monitor environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to those who have responsibility for a specific area of work or who lead a work group or team. It addresses the knowledge, processes and techniques necessary to implement and monitor environmentally sustainable work practices, including the development of processes and tools. It includes: • Identifying areas for improvement • Developing plans to make improvements • Implementing and monitoring improvements in environmental performance. This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Investigate current practices in relation to resource usage.	1.1 Identify environmental regulations applying to the enterprise. 1.2 Assess procedures for assessing <i>compliance</i> with environmental regulations. 1.3 Collect information on environmental and resource efficiency systems and procedures, and provide to the work group where appropriate. 1.4 Measure and record current resource usage by members of the work group.

ELEMENT	PERFORMANCE CRITERIA
	1.5 Analyse and record current purchasing strategies. 1.6 Analyse current work processes to access information and data and assist in identifying areas for improvement.
2. Set targets for improvements.	2.1 Seek input from stakeholders, key personnel and specialists. 2.2 Access external sources of information and data as required. 2.3 Evaluate alternative solutions to workplace environmental issues. 2.4 Set efficiency targets.
3. Implement performance improvement strategies.	3.1 Source techniques/tools to assist in achieving targets. 3.2 Apply continuous improvement strategies to own work area of responsibility and communicate ideas and possible solutions to the work group and management. 3.3 Integrate environmental and resource efficiency improvement plans for own work group with other operational activities and implement them. 3.4 Seek suggestions and ideas about environmental and resource efficiency management from stakeholders and act upon them where appropriate. 3.5 Implement costing strategies to fully value environmental assets.
4. Monitor performance.	4.1 Document outcomes and communicate reports on targets to key personnel and stakeholders. 4.2 Evaluate strategies. 4.3 Set new targets and investigate and apply new tools and strategies. 4.4 Promote successful strategies and reward participants where possible.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

REQUIRED SKILLS AND KNOWLEDGE

- using relevant environmental and resource efficiency systems, tools and procedures
- applying quality assurance systems relevant to own work area
- applying relevant supply chain procedures
- measurement and calculation techniques
- communication/consultation skills to ensure information is supplied to the work group

Reading and writing is required to comprehend documentation and interpret environmental and energy efficiency requirements and to document and maintain records

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Required knowledge includes:

- how to access and use relevant environmental and resource efficiency systems, tools and procedures
- understanding of best practice approaches relevant to own area of responsibility
- strategies to maximise opportunities and minimise impacts relevant to own work area
- relevant environmental and resource efficiency issues specific to industry practices
- methods for measuring and calculating resource usage

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to implement and monitor integrated environmental and resource efficiency management policies and procedures within an organisation.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

EVIDENCE GUIDE	
	• monitor and investigate current resource usage • develop plans to improve sustainability • implement environmental improvements. Consistent performance should be demonstrated. For example, look to see that: • environmental performance is routinely monitored and investigated • areas for improvements are followed through and the implemented changes are in turn monitored and investigated.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or

EVIDENCE GUIDE	
	similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures. Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include: - addressing environmental and resource sustainability initiatives such as Environmental Management Systems, action plans, surveys and audits - reference to standards, guidelines and approaches such as: - ISO 14001 Environmental Management Systems - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to cradle • Global Reporting Initiative • Ecological footprinting • Triple Bottom Line reporting • Product Stewardship • determining enterprise's most appropriate waste treatment including waste to landfill, recycling, re-use and wastewater treatment • applying the waste management hierarchy in the workplace • initiating and/or maintaining appropriate enterprise procedures for operational energy consumption, including stationary energy and non stationary (transport) • efficient use of water • minimising greenhouse gas emissions • use of controls to minimise the risk of environmental damage from hazardous substances
Measure	Measuring techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data • others as appropriate to the specific industry contexts.
Techniques and tools	Techniques and tools may includeÂ : • visual workplace concepts • measurement, display and/or recording devices • changed work practices/procedures • competence development and awareness training • process and equipment items
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and codes of practice.
Incidents	Incidents include:

RANGE STATEMENT	
	• breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance
Purchasing strategies	Purchasing strategies include: • influencing suppliers to take up environmental sustainability • selecting materials/components with a lower environmental profile.
Stakeholders, key personnel and specialists	Stakeholders, key personnel and specialists include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • other organisations • key personnel within the organisation, and specialists outside it who may have particular technical expertise
Suggestions	Suggestions includes ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • make more efficient use of energy, water and other resources • maximise opportunities to re use and recycle materials • identify strategies to offset or mitigate environmental impacts. e.g. purchasing of carbon credits • express purchasing power through the selection of suppliers with improved environmental performance. e.g. purchasing renewable energy and materials with lower embedded carbon • eliminate the use of hazardous and toxic materials increasing the reusability/recyclability of wastes/products.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV672B Develop workplace policy and procedures for environmental sustainability

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to develop and implement a workplace sustainability policy, including the modification of the policy to suit changed circumstances. This unit is based on the sustainability guideline standard GCSSUS03A Develop workplace policy and procedures for sustainability.

Application of the Unit

Application of the unit	This competency applies to team leaders/supervisors/managers who are required to develop approaches to environmental sustainability within workplaces, including the development and implementation of policy. It includes: • Communicating with relevant stakeholders • Developing and monitoring sustainability policies • Reviewing and improving sustainability policies. This competency applies to all sectors of the manufacturing industry. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop workplace sustainability policy.	1.1 Define <i>scope of sustainability policy</i> . 1.2 Identify and consult <i>stakeholders</i> as a key component of the policy development process. 1.3 Review environmental sustainability <i>strategies</i> relevant to all stages of work covered by the policy 1.4 Make recommendations for policy options based on likely effectiveness, timeframes and cost. 1.5 Develop policy is that reflects the organisation's commitment to sustainability as an integral part of the

ELEMENT	PERFORMANCE CRITERIA
	business planning and as a business opportunity. 1.6 Agree upon appropriate methods of implementation.
2. Communicate the policy.	2.1 Promote the policy, including its expected outcome to key stakeholders. 2.2 Inform those involved in implementing the policy as to outcomes expected, activities to be undertaken and responsibilities assigned.
3. Implement the policy.	3.1 Develop and communicate procedures to help implement the policy. 3.2 Implement strategies for continuous improvement in resource efficiency. 3.3 Establish record systems for tracking continuous improvements in sustainability approaches and assign responsibilities.
4. Review policy implementation	4.1 Record outcomes and provide feedback to key personnel and stakeholders. 4.2 Investigate success or otherwise of policy. 4.3 Monitor records to identify trends that may require remedial action, and use to promote continuous improvement of performance. 4.4 Modify policy and or procedures as required to ensure improvements are made.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- developing and implementing systems and procedures to aid in the achievement of sustainability in the workplace
- applying quality assurance systems relevant to own enterprise
- accessing and applying other relevant enterprise policies, procedures and protocols
- relevant industry competency
- interpreting business/strategic plans

This unit requires the ability to:

REQUIRED SKILLS AND KNOWLEDGE

- read and evaluate complex and formal documents such as policy and legislation
- research, analyse and present information
- prepare written reports requiring precision of expression and language and structures suited to the intended audience
- adjust communication to suit different audiences
- deal with different points of view and dissenting stakeholders.

Required knowledge

Required knowledge includes:

- understanding of relevant policy development and implementation processes and practices
- understanding of the principles, practices and available tools and techniques of sustainability management relevant to the particular industry context
- best practice approaches relevant to own work area
- equal employment opportunity, equity and diversity principles and occupational health and safety implications of policy/s being developed

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to develop and implement integrated sustainability policies and procedures within an enterprise. The review of the policy after implementation will also need to be evidenced.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- develop relevant policy and procedures that comply with the regulatory requirements and business plans
- develop a workable implementation strategy
- include measurable criteria for reviewing improvement.

Consistent performance should be demonstrated. For

EVIDENCE GUIDE	
	example, look to see that: • policy implementation is reviewed • policy is developed to become part of the routine practices of the organisation.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally

EVIDENCE GUIDE

	appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Scope of sustainability policy

Scope of sustainability policy include:

- The area/s of environmental sustainability to be targeted and whether social and economic sustainability will be incorporated
- The parts of the enterprise to which it is to apply, including whether it is for the whole enterprise, one site, one work area or combinations of these
- An investigation of the particular business and market context of the industry/ enterprise
- Addressing sustainability initiatives through reference to standards, guidelines and approaches such as:
 - ISO 14001 Environmental Management Systems
 - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to grave/cradle to cradle • Global Reporting Initiative • Ecological Footprint Assessment • Triple Bottom Line reporting • Product Stewardship.
Stakeholders	Stakeholders include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • regulators • other organisations.
Strategies	Implementation strategies include: • awareness raising among stakeholders • training of staff in principles and techniques of sustainability • promotional activities. Continuous improvement strategies include ongoing measuring, improving and monitoring such as: • Plan, do, check, act cycles • Kaizen (continuous improvement) • Kaizen blitz (breakthrough improvement event) • Six sigma approaches Environmental sustainability strategies include: • reducing toxic material and hazardous chemical use • minimising resource use through changes in processes, facility design and management • supply chain and life cycle management approaches • sourcing renewable energy and low carbon footprint materials • reducing, re-using, recycling and waste

RANGE STATEMENT

	reduction • product and process improvements • carbon offsets • reducing greenhouse gas and other emissions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

PSPMNGT610A Manage public sector financial resources

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit covers input into public sector budgeting, financial forecasting and reporting requirements, and the allocation and management of resources to achieve the required outputs of the business unit. It includes contributing to financial bids and estimates, allocating funds, managing budgets and reporting on financial activity.

In practice, the management of public sector financial resources may occur in the context of other generalist or specialist public sector workplace activities such as managing compliance with legislation, maintaining and enhancing ethical practice, managing people, policy etc.

This unit is one of 6 units of competency in the *Working in Government* and *Management* Competency fields that deal with resources.

Related units are:

PSPGOV204B Access and use resources

PSPGOV305B Access and use resources and financial systems

PSPGOV403B Use resources to achieve work unit goals

PSPGOV503B Coordinate resource allocation and usage

This is a new unit of competency, added to the *Management* Competency field of the Training Package in 2004.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements are the essential outcomes of the unit of competency. Together, performance criteria specify the requirements for competent performance. Text in *bold italics* is explained in the Range Statement following.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Contribute to financial bids and estimates	1.1 Organisational initiatives requiring the preparation of <i>bids</i> and <i>estimates</i> are identified in accordance with resource constraints and organisational needs 1.2 <i>Information</i> for bids/estimates is substantiated, contains logical assumptions and takes account of strategic plans, government policies and priorities 1.3 Information for bids/estimates is prepared in accordance with government <i>budgetary requirements</i> including a timeframe to meet critical submission dates 1.4 <i>Documentation</i> to support bids/estimates is prepared in accordance with budget guidelines
2. Allocate funds	2.1 <i>Budgets</i> are approved and financial resources are allocated according to organisational priorities/business plan 2.2 Allocations are made in accordance with organisational policy and procedures and take account of any statutory requirements or constraints 2.3 Audit trails are maintained to ensure accurate tracking and to identify variances between agreed and actual allocations

ELEMENT	PERFORMANCE CRITERIA
	2.4 Financial allocation is monitored against organisational objectives and priorities and <i>corrective action</i> is taken as required in accordance with organisational policy and procedures
3. Manage budgets	3.1 Budget management is undertaken that meets the financial accountability requirements of the organisation 3.2 Expenses are monitored against budget and authorised in accordance with financial <i>delegation</i> and organisational <i>financial controls</i> 3.3 <i>Financial reports</i> are obtained and provided in accordance with organisational requirements 3.4 Expenses are monitored through analysis of financial information/reports and problems are resolved or referred in accordance with organisational procedures and financial delegation 3.5 Expenditure is aligned with service delivery milestones/expectations 3.6 Changes to the budget are negotiated to account for potential under-spending, delays in service/program delivery, overruns and unneeded line items in accordance with organisational policy and procedures
4. Report on financial activities	4.1 Requirements for financial management and reporting are identified in accordance with the public sector <i>financial management framework</i> 4.2 Financial management and reporting are undertaken in accordance with organisational requirements and <i>public sector financial management policy and procedures</i>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Skill requirements

Look for evidence that confirms skills in:

preparing information and reports requiring precision of expression

meeting formatting and process requirements for bids and estimates and linkages to strategic plans

REQUIRED SKILLS AND KNOWLEDGE

monitoring financial information
interpreting and signing off on financial reports
interpreting organisational information in financial terms
adjusting communication to suit different audiences
using cross-cultural communication relating to financial management - across professional cultures such as accounting, IT, arts, policy areas
responding to diversity, including gender and disability
accessing information and legislation electronically or in hard copy
applying environmental, sustainability and occupational health and safety procedures relating to working in the public sector

Knowledge requirements

Look for evidence that confirms knowledge and understanding of:

financial management principles
legislation, policies and processes relating to public sector financial management, such as conflicts of interest, procurement, value for money
the organisation's financial accountability mechanisms
corporate governance requirements
internal controls and why they are used
delegations and why the public sector uses them
public sector financial management framework (detailed knowledge) and the relationship between the elements of the framework
documents that make up the financial management framework
legislation related to working in the public sector such as equal employment opportunity, environmental, sustainability and occupational health and safety requirements

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the Unit descriptor, Performance Criteria, the Range Statement and the Assessment Guidelines for the Public Sector Training Package.

Units to be assessed together

- *Pre-requisite* units that must be achieved prior to this unit: *Nil*
- *Co-requisite* units that must be assessed with this unit: *Nil*
- *Co-assessed units* that may be assessed with this unit to increase the efficiency and realism of the assessment process

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include, but are not limited to:

PSPETHC601B Maintain and enhance confidence in public service

PSPLEGN601B Manage compliance with legislation in the public sector

PSPMNGT603B Facilitate people management

PSPMNGT602B Manage resources

PSPMNGT608B Manage risk

PSPMNGT609B Formulate business strategies

PSPPOL603A Manage policy implementation

Overview of evidence requirements

In addition to integrated demonstration of the elements and their related performance criteria, look for evidence that confirms:

- the knowledge requirements of this unit
- the skill requirements of this unit
- application of the Employability Skills as they relate to this unit (see Employability Summaries in Qualifications Framework)
- management of public sector financial resources in a range of (2 or more) contexts (or occasions, over time)

Resources required to carry out assessment

These resources include:

- public sector and organisational financial procedures and protocols
- workplace scenarios and case studies to capture the range of situations likely to be encountered when managing public sector financial resources
- financial legislation and guidelines such as central agency guidelines
- budget process and guidelines

Where and how to assess evidence

Valid assessment of this unit requires:

- a workplace environment or one that closely resembles normal work practice and replicates the range of conditions likely to be encountered when managing public sector financial resources, including coping with difficulties, irregularities and breakdowns in routine
- management of public sector financial resources in a range of (2 or more) contexts (or occasions, over time)

Assessment methods should reflect workplace demands, such as literacy, and the needs of particular groups, such as:

- people with disabilities
- people from culturally and linguistically diverse backgrounds

EVIDENCE GUIDE

- Aboriginal and Torres Strait Islander people
- women
- young people
- older people
- people in rural and remote locations

Assessment methods suitable for valid and reliable assessment of this competency may include, but are not limited to, a combination of 2 or more of:

- case studies
- portfolios
- projects
- questioning
- scenarios
- authenticated evidence from the workplace and/or training courses

For consistency of assessment

Evidence must be gathered over time in a range of contexts to ensure the person can achieve the unit outcome and apply the competency in different situations or environments

Range Statement

RANGE STATEMENT

The Range Statement provides information about the context in which the unit of competency is carried out. The variables cater for differences between States and Territories and the Commonwealth, and between organisations and workplaces. They allow for different work requirements, work practices and knowledge. The Range Statement also provides a focus for assessment. It relates to the unit as a whole. Text in *italics* in the Performance Criteria is explained here.

Bids may include

- program discretionary bids
- program, sub-program, section, business unit bids
- portfolio managed bids

Estimates may include

- budget estimates
- additional estimates
- forward estimates
- long-term estimates
- forecasts

Information may include

- historical information
- cost-benefit analysis

RANGE STATEMENT

	• staff requirements • contractual information • efficiency/sustainability requirements
<i>Budgetary requirements may include</i>	• zero-based budgeting • accrual budgeting • activity-based costing/management • output-based budgeting • top-down/bottom-up approach • base plus increment
<i>Supporting documentation may include</i>	• phasing for liability and expenditure/cash flow implications • impact statements • reasons for major variations to financial guidance • staffing resources
<i>Budgets may include</i>	• capital expenses • recurrent expenses • staffing costs • cash flow • forward estimates
<i>Corrective action may include</i>	• re-prioritising activities • funds transfer • re-phasing liability/expenditure
<i>Delegations are</i>	• functions or powers (under an act) assigned to others • limited to specified powers or amounts • made to persons in specified positions
<i>Financial controls should</i>	• identify, record and measure revenue, expenses, assets, liabilities and equity • ensure assets are safeguarded and used to avoid waste, extravagance, loss and misuse • ensure liabilities are not incurred without proper authority • ensure correct valuation, cut-off, presentation and disclosure of financial balances and transactions • be linked to the organisation's risk management strategy
<i>Financial reports may include</i>	• program, sub-program, section, business unit financial reports • accrual reports • monthly/quarterly financial reports including cost/unit, costs incurred compared with share of program delivered • annual reports
<i>Elements of the public sector financial management framework</i>	• internal controls • segregation of duties • delegations

RANGE STATEMENT

may include

- corporate governance requirements
- service level agreements
- internal and external reporting
- risk management

Public sector financial policies and procedures may include

- financial management acts and regulations
- financial administration and audit acts
- Treasury guidelines
- public sector finance standards
- financial management benchmarking studies
- the organisation's:
- financial management practice manual
- delegation manual
- budget manual/instructions
- style manual
- quality manual
- government financial policy statements

Unit Sector(s)

Not applicable.

Competency field

Competency field Management

PUADEFEO101B Work safely with explosive ordnance

Modification History

Not Applicable

Unit Descriptor

Not Applicable

Application of the Unit

Not Applicable

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Not Applicable

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

Not Applicable

Required Skills and Knowledge

Not Applicable

Evidence Guide

Not Applicable

Range Statement

Not Applicable

Unit Sector(s)

Not Applicable

PUADEFEO101C Work safely with explosive ordnance

Modification History

Unit Descriptor

This unit covers the competency required to achieve a safe work environment when working with explosive ordnance. **Explosive ordnance** being all munitions containing explosives, nuclear fission or fusion materials, and biological and chemical agents.

Application of the Unit

The application of this unit in the workplace - the environments, complexities and situations involved - will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

This text will be useful for the purposes of job descriptions, recruitment advice or job analysis; where possible, it will not be too job specific to allow other industries to import it into other Training Packages, where feasible.

Licensing/Regulatory Information

Pre-Requisites

Nil

Employability Skills Information

The required outcomes described in this Unit of Competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this Unit of Competency is packaged, will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Access and apply safety procedures	1.1 Safety procedures and instructions are accessed and clarified 1.2 All work is conducted within the requirements of organisation permit-to-work and/or tag out procedures 1.3 Breaches in site safety are identified and acted on or reported in accordance with organisation reporting procedures
2 Apply personal safety measures	2.1 Personal protective measures are followed in accordance with organisation policy and procedures 2.2 Safety, of immediate working area and equipment is established and maintained in accordance with organisation policy, procedures and directives 2.3 Relevant authorisation is obtained before specialised and hazardous work is carried out in accordance with organisation procedures and directives
3 Apply emergency first aid	3.1 Emergency first aid is administered in accordance with organisation procedures 3.2 Details of first aid administered are recorded and reported in accordance with organisation rules and procedures 3.3 Individual responsibilities regarding dangerous goods and hazardous substances are recognised and applied
4 Apply dangerous goods and hazardous substances requirements	4.1 Individual responsibilities regarding dangerous goods and hazardous substances are recognised and applied 4.2 Dangerous goods and hazardous substances labels and characteristics are identified, recognised and relevant action/criteria are applied

- 4.3 Dangerous goods and hazardous substances are stored in accordance with the relevant compatibility, separation constraints and security requirements
 - 4.4 Dangerous goods and hazardous substances are handled and moved in accordance with legislative requirements and organisation procedures
- 5 **Apply net explosive quantity and compatibility**
 - 5.1 Documentation and licensing limitations are identified and/or acquired in accordance with organisation policy and procedures
 - 5.2 **Net explosive quantity** is calculated and applied in accordance with statutory requirements and organisation policy and procedures
 - 5.3 **Compatibility** is assessed and applied in accordance with statutory requirements and organisation policy and procedures
- 6 **Identify and report incidents**
 - 6.1 Organisation incident and injury statistics are identified and noted
 - 6.2 Incidents and injuries are recorded and reported in accordance with organisation procedures
 - 6.3 Participation in incident investigations is conducted in accordance with the responsibilities and protection under legislation

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required Skills

access, read, interpret and apply information on safety

apply area safety procedures

identify and report hazards and incidents

identify, select and use personal protection measures

apply emergency first aid

- calculate net explosive quantity
- assess compatibility
- apply safe manual handling procedures
- comply with hazardous materials requirements
- follow instructions/directives and report information
- encourage other team members
- use a variety of verbal and non-verbal communication techniques
- read to a level required to interpret job instructions, workplace forms and reports
- write at the level required to complete workplace documentation and reports

Required Knowledge

- organisation safety policies and structures
- organisation safety information sources
- safety and advisory signs
- hazard and incident identification and reporting techniques
- calculation of net explosive quantity
- assessment of compatibility
- personal protection measures
- emergency first aid
- manual handling procedures
- hazardous materials requirements
- team work
- techniques for supporting others
- composition of teams and roles and responsibilities of team members
- verbal and non-verbal communication techniques
- written communication to a level required to complete workplace documentation and reports

Evidence Guide

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to comply with organisation safety requirements and appropriate legislative and regulatory requirements

Assessment must also confirm the ability to work safely within an explosive ordnance environment and to:

identify, select and use personal protective measures

apply safe manual handling

administer emergency first aid

identify, handle and store hazardous materials

calculate and apply net explosive quantity

assess and apply compatibility

identify and report hazards and incidents

participate in incident investigations.

Consistency in performance

Competency should be demonstrated over time and observed in a range of actual or simulated explosive ordnance contexts

Context of and specific resources for assessment**Context of assessment**

Competency should be assessed in the workplace or in a simulated work environment and in accordance with all relevant legislation and organisation requirements.

Evidence should be gathered through observation of the practical component and targeted questioning to assess underpinning knowledge.

Specific resources for assessment

Access to facilities and resources used in the storage, distribution or maintenance of explosive ordnance

Guidance information for assessment

Information that will assist or guide assessment will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

Range Statement

RANGE STATEMENT

The Range Statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. **Bold italicised** wording in the Performance Criteria is detailed below.

Explosive ordnance include

bombs and warheads
guided and ballistic missiles
artillery, mortar, rocket and small arms ammunition
all mines, torpedoes and depth charges
demolition charges
pyrotechnics
clusters and dispensers
cartridge and propellant actuated devices
electro-explosive devices
clandestine and improvised explosive devices
all similar or related items or components explosive in nature

Safety procedures and instructions may include

Material Safety Data Sheets (MSDS)
Australian Book of Reference 862
Book of Reference (British)
Organisation instructions
Depot Standing Instructions
Section Procedural Instructions (SPI)
Departmental Maintenance Procedure Instructions (DMPI)
Technical Instructions Armament Depots (TIAD)

Organisation may include

the Defence organisation
other government departments or instrumentalities that work with explosive ordnance

	enterprises that work with explosive ordnance
Personal protective measures may include	hard hats anti-static straps overalls face shields hearing protection conductive shoes gas masks eye protection anti-static shoes anti-solvent creams safety boots safety joggers respiratory masks gloves
Emergency first aid may be limited to	Cardio-Pulmonary Resuscitation (CPR) bleeding control spinal injury awareness basic patient management
Dangerous goods and hazardous substances may include	explosive ordnance solvents beryllium tools paints adhesives acids otto fuel compressed gases contaminated waste
Net explosive quantity may include	the explosive capacity calculated in a wide range of activities related to the storage, distribution and maintenance of explosive ordnance

Compatibility is

assessed in a wide range of activities related to the storage, distribution and maintenance of explosive ordnance and other hazardous materials

Reports may include

written
verbal
approved forms

Unit Sector(s)