



Australian Government

Department of Education, Employment and Workplace Relations

MEA302C Remove and install aircraft hydro-mechanical and landing gear system components

Release: 2

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Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated.

Unit Descriptor

This unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) 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. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

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

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

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	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

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.
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Elements and Performance Criteria

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|---|---|
| 1. Remove hydro-mechanical system components | 1.1. Hydro-mechanical system is rendered safe and prepared in accordance with maintenance manual, including fitment of isolation tags, where necessary, to safety
1.2. Removal of hydro-mechanical components is carried out in accordance with maintenance manual
1.3. Required maintenance documentation is accurately completed and correctly
1.4. Removed components are tagged, sealed and packaged in accordance with procedures |
| 2. Remove landing gear components | 2.1. The aircraft is jacked as specified in the maintenance manual for landing gear 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
2.4. Removed components are tagged, sealed and packaged in accordance with procedures |
| 3. Install hydro-mechanical system components | 3.1. Components to be installed are checked to confirm correct part numbers, seal 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, seal 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

Look for evidence that confirms skills in:

- using 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
- correctly installing and securing of aircraft hardware
- using hand skills and tools to remove and install landing gear components and the correct handling of heavy components
- using maintenance manuals to prepare the aircraft for component removal and installation and correct interpretation of removal and installation instructions
- applying standard procedures
- observing all relevant OHS procedures, including the use of MSDS and relevant items of 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

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 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 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 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 Evidence Guide.
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

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	Hydro-mechanical systems include: 1. Hydraulic systems 2. Fuel systems Components of hydro-mechanical systems include: 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	Landing gear components include: 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)

Aviation maintenance

Competency field

Co-requisite units

Not applicable