



Australian Government

MEA327 Fabricate and/or repair aircraft mechanical components or parts

Release: 2

MEA327 Fabricate and/or repair aircraft mechanical components or parts

Modification History

Release 2. Equivalent to MEA327 Fabricate and/or repair aircraft mechanical components or parts with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and the use of relevant maintenance manuals, drawings and specifications to fabricate and repair a range of fixed and rotary wing aircraft mechanical components during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

The unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) and Structures Certificate IV training pathways.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation safety Authority (CASA).

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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 for the particular specification requirements
	1.3 Components or parts are fabricated in accordance with required specifications while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE)
	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 while observing all relevant WHS requirements, including the use of MSDS and items of PPE
	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

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Applicable components to be fabricated and/or repaired include:

- Hose assemblies
- Pipes
- Cables, pulleys, chains, sprockets and gear drives
- Control rods, bellcranks and links

Repair includes:

- 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

Procedures and requirements include:

- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA327 Fabricate and/or repair aircraft mechanical components or parts

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS practices, including the use of MSDS and PPE
- using 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 of Conditions
 - fabricate components
 - identify requirements and complete repairs
 - test and/or adjust components, as required
- correctly tagging, sealing and packaging completed components.

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. This shall be demonstrated through application across a number of different aircraft components listed in the Assessment Conditions.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- component operation
- fabrication and repair procedures and processes
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures
- relevant WHS practices
- how to obtain MSDS
- use of PPE.

Assessment Conditions

- 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 applicable general and special-purpose tools and test equipment found in most routine situations would be used where appropriate.
- Evidence of knowledge about the general aspects of material specification and selection, measurement, fabrication and repair should be related to specific aircraft component applications. 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.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on at least one item from each of the following groups:
 - hose assemblies
 - pipes
 - cables, pulleys, chains, sprockets and gear drives
 - control rods, bellcranks and links.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.
- Individuals being assessed who have already attained MEA328 Maintain and/or repair aircraft mechanical components or parts will have fully met the criteria for Element 2. The Log of Industrial Experience and Achievement records relating to MEA328 Maintain and/or repair aircraft mechanical components or parts may be accepted as also meeting the evidence requirements for the Performance Criteria for this Element.

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