



**Australian Government**

# **MEA327B Fabricate and/or repair aircraft mechanical components or parts**

**Revision Number: 2**

## **MEA327B Fabricate and/or repair aircraft mechanical components or parts**

### **Modification History**

Minor formatting and editorial changes made. Prerequisite unit version code updated. Additional assessment advice provided in the Evidence Guide. Missing knowledge requirements reinstated.

### **Unit Descriptor**

This unit of competency is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) and Structures Certificate IV training pathways. It covers the competencies required to fabricate and repair a range of aircraft mechanical components and parts. 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 B1 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 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

|         |                                                                                              |
|---------|----------------------------------------------------------------------------------------------|
| 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. Fabricate mechanical components or parts | <ul style="list-style-type: none"><li>1.1. Specifications are interpreted to determine the dimensions and procedure for fabrication</li><li>1.2. Appropriate materials, tools, equipment and assembly or fabrication jigs are selected and prepared for the particular specification requirements</li><li>1.3. <b>Components</b> or parts are fabricated in accordance with required specifications</li><li>1.4. Test equipment and rigs are used, where applicable, to confirm serviceability of finished components</li><li>1.5. Fabricated components are tagged, sealed and packaged within specified procedures</li><li>1.6. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures</li></ul>                                                                                                                                                                                                    |
| 2. Repair mechanical components or parts    | <ul style="list-style-type: none"><li>2.1. Repair or replacement requirements are determined, following disassembly and assessment of component parts for serviceability, in accordance with the relevant maintenance documentation</li><li>2.2. Tagging and repair instructions are accurately specified for parts requiring specialist repair</li><li>2.3. Components are modified, as approved, by relevant manufacturers' bulletins or procedures</li><li>2.4. Mechanical component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents</li><li>2.5. Mechanical components are adjusted, as required, to operate within prescribed specifications</li><li>2.6. Repaired components are tagged, sealed and packaged in accordance with specified procedures</li><li>2.7. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures</li></ul> |

## **Required Skills and Knowledge**

### **Required skills**

Look for evidence that confirms skills in:

- applying relevant OHS procedures
- 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 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
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures
- relevant OHS practices
- how to obtain MSDS
- use of PPE

## 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.

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| <b>Overview of assessment</b>                                                                       | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b> | <p>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.</p> <p>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 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.</p> <p>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 Evidence Guide.</p> |
| <b>Context of and specific resources for assessment</b>                                             | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| <b>Method of assessment</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Guidance information for assessment</b> | Individuals being assessed who have already attained MEA328C Maintain and/or repair aircraft mechanical components or parts, will have fully met the criteria for Element 2. Log of Industrial Experience and Achievement records relating to MEA328C 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. |

## Range Statement

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                              |
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| 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. |                                                                                                                                                                                                                                                              |
| <b>Note</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide                                                                                                                         |
| <b>Applicable components</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Components to be fabricate and/or repaired may include: <ol style="list-style-type: none"> <li>1. Hose assemblies</li> <li>2. Pipes</li> <li>3. Cables, pulleys, chains, sprockets and gear drives</li> <li>4. Control rods, bellcranks and links</li> </ol> |
| <b>Repair</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 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                                                                             |
| <b>Application</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Application of this unit may relate to: <ul style="list-style-type: none"> <li>• scheduled or unscheduled maintenance activities</li> <li>• individual or team-related activities</li> </ul>                                                                 |
| <b>Procedures and requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            | 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