



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEA127B Provide technical advice in the maintenance and management of aircraft and aeronautical product**

Release: 2

## **MEA127B Provide technical advice in the maintenance and management of aircraft and aeronautical product**

### **Modification History**

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

### **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**

This unit of competency requires application of technical knowledge to provide advice on the need for modifications, repairs and maintenance requirements within the jurisdiction of CASA.

Applications include aircraft, aircraft systems and items of aeronautical product.

### **Licensing/Regulatory Information**

Not applicable.

## Pre-Requisites

MEA349B      Apply basic scientific principles and techniques in aeronautical engineering situations

**AND**

MEA350A      Select and test aeronautical engineering materials

**OR**

MEA272B      Apply basic scientific principles and techniques in avionic engineering situations

**AND**

MEA273A      Select and test avionic engineering materials

## 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. Develop an aircraft maintenance program and minimum equipment list      | 1.1. The requirements for an aircraft maintenance program are determined from <b>regulations and organisational policies and procedures</b><br>1.2. An applicable maintenance program is identified or is drafted in accordance with relevant guidelines<br>1.3. The proposed maintenance program is submitted for approval<br>1.4. The requirement for a minimum equipment list is determined from relevant organisational policies and procedures<br>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<br>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<br>3.2. A maintenance organisation exposition is drafted in accordance with relevant regulations and organisational policies and procedures                                                                                                                                                                                                                                                                                                                                                             |
| 4. Provide mechanical advice in aircraft maintenance                       | 4.1. <b>Independent technical input</b> is provided with regard to <b>aircraft structure and systems/components</b><br>4.2. Knowledge of aircraft structures and <b>specialist input</b> is utilised to determine airworthiness<br>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 <b>avionic systems/components</b><br>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. <b>Aircraft operation and maintenance trends</b> are monitored<br>6.2. Maintenance <b>management system elements</b> are reviewed against trends and proposed in accordance with regulatory requirements, organisational policies and procedures                                                                                                                                                                                                                                                                                                                                                          |

## **Required Skills and Knowledge**

### **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:

- CARs and 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
- OHS, equity, fraud and ethics

## 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>                                                                       | 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.                                                                                                                                                                                                                                                                                                                  |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b> | 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. |
| <b>Context of and specific resources for assessment</b>                                             | 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.            |
| <b>Method of assessment</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Guidance information for assessment</b>                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## 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.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Application</b>                                                     | <p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> <li>• scheduled or unscheduled maintenance</li> <li>• individual or team-related activities</li> </ul>                                                                                                                                                                                                                                                                                                        |
| <b>Relevant regulations and organisational policies and procedures</b> | <p>Relevant regulations and organisational policies and procedures may include:</p> <ul style="list-style-type: none"> <li>• CARs and Advisory Circulars (ACs)</li> <li>• CASRs, Manuals of Standards and associated Acceptable Means of Compliance and Guidance Material</li> <li>• maintenance organisation expositions</li> <li>• continuing airworthiness management organisation expositions</li> <li>• policy manuals</li> <li>• procedures manuals</li> <li>• quality manuals</li> </ul> |
| <b>Independent technical input</b>                                     | <p>Independent technical input may include:</p> <ul style="list-style-type: none"> <li>• defect investigation and compilation of service difficulty reports</li> <li>• modification proposals</li> <li>• repair scheme proposals</li> <li>• proposed amendments to servicing schedules and maintenance data and programs</li> <li>• advice to maintenance personnel, senior maintenance managers and higher technical/regulatory authorities</li> </ul>                                         |
| <b>Aircraft structure</b>                                              | <p>Aircraft structure includes:</p> <ul style="list-style-type: none"> <li>• primary and secondary structural components</li> <li>• seating and cargo restraints</li> </ul>                                                                                                                                                                                                                                                                                                                     |
| <b>Mechanical systems/components</b>                                   | <p>Mechanical systems/components include:</p> <ul style="list-style-type: none"> <li>• engines and engine systems and components</li> <li>• propellers and propeller system components</li> <li>• landing gear systems and components</li> <li>• hydro-mechanical systems comprising hydraulic, pneumatic, fuel and components</li> </ul>                                                                                                                                                       |

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|                                                  | <ul style="list-style-type: none"> <li>• mechanical systems and components</li> <li>• electrical systems and components</li> <li>• oxygen</li> <li>• furnishings and safety equipment</li> </ul>                                                                                                                                                                                                                                                                                                      |
| <b>Specialist input</b>                          | <p>Specialist input may be obtained from:</p> <ul style="list-style-type: none"> <li>• professional engineers</li> <li>• NDT technicians</li> <li>• LAMEs with applicable ratings</li> <li>• personnel with CASR Part 145 or Part 42F certifying authorities</li> </ul>                                                                                                                                                                                                                               |
| <b>Avionic systems/components</b>                | <p>Avionic systems/components include:</p> <ul style="list-style-type: none"> <li>• electrical power generation and distribution</li> <li>• electrical systems</li> <li>• control and warning systems</li> <li>• flight instruments</li> <li>• aircraft data communication</li> <li>• automatic flight and engine control systems</li> <li>• communication systems</li> <li>• navigation systems</li> <li>• radar</li> <li>• role equipment, such as forward-looking infra-red (FLIR) pods</li> </ul> |
| <b>Aircraft operation and maintenance trends</b> | <p>Aircraft operation and maintenance trends may be obtained from:</p> <ul style="list-style-type: none"> <li>• aircraft flight and technical records</li> <li>• service difficulty reports</li> <li>• maintenance worksheets</li> <li>• log books</li> <li>• continuing analysis maintenance program reports</li> <li>• data from manufacturers and other operators</li> </ul>                                                                                                                       |
| <b>Management system elements</b>                | <p>Management system elements may include:</p> <ul style="list-style-type: none"> <li>• aircraft maintenance program</li> <li>• minimum equipment list</li> <li>• continuing airworthiness management organisation exposition</li> <li>• maintenance organisation expositions</li> </ul>                                                                                                                                                                                                              |

## Unit Sector(s)

Aviation maintenance management

## **Competency field**

## **Co-requisite units**

Not applicable