



Australian Government

MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems

Release: 2

MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems

Modification History

Release 2. Equivalent to MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems. Updated to meet training package policy requirements.

Application

This unit of competency describes the skills and knowledge required to provide 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.

The unit applies to advice provided in scheduled and unscheduled maintenance. It is applied within the airworthiness jurisdiction of the Australian Defence Force (ADF).

This unit forms part of the Civil Aviation Safety Authority (CASA) requirement for maintenance certification licences under Civil Aviation Safety Regulation (CASR) Part 66. Where a CASA licensing outcome is sought, users must refer to the licensing provisions in the MEA Aeroskills Companion Volume Implementation Guide.

Pre-requisite Unit

MEA705 Apply basic scientific principles and techniques in aeronautical engineering situations

and

MEA707 Select and test aeronautical engineering materials

OR

MEA706 Apply basic scientific principles and techniques in avionic engineering situations

and

MEA708 Select and test avionic engineering materials

Competency Field

Aviation maintenance management

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1. Provide mechanical systems advice in modification, repair, maintenance design relating to aircraft mechanical systems and structures
2. Provide advice in the maintenance and modification design for aircraft avionics systems
3. Conduct and advise an aircraft recovery

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Provide independent technical input when requested by maintenance personnel, senior maintenance managers, and higher technical authorities
- 1.2 Use own aircraft mechanical systems knowledge to determine aircraft airworthiness
- 1.3 Use own knowledge of aircraft structures to determine aircraft airworthiness
- 2.1 Provide independent technical input when requested by maintenance personnel, senior maintenance managers, and higher technical authorities
- 2.2 Use aircraft avionic systems knowledge to determine aircraft airworthiness
- 3.1 Evaluate battle/incident damage and operational capability of an aircraft
- 3.2 Determine repair methods and/or limits
- 3.3 Plan an aircraft recovery

Foundation Skills

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

Unit Mapping Information

Release 2. Equivalent to MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems.

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 MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems

Modification History

Release 2. Equivalent to MEA128 Provide engineering advice in the modification, maintenance and management of aircraft systems. Updated to meet training package policy requirements.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, which must include the ability to:

- provide independent engineering advice on the modification, maintenance and management of aircraft systems in the ADF technical airworthiness regulatory system to operators, engineering officers, or executive personnel that requires:
 - assessing the battle damage of one aircraft
 - assessing the incident damage to a different aircraft.

Each assessment must include:

- repair scheme development and/or extension
- development of modification proposals
- review of maintenance requirements.

In the course of the above work, the candidate must:

- use subject matter experts and documented technical information
- provide advice verbally and in writing
- provide advice that complies with regulations and organisational policy and procedures.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- regulatory and organisational policy and procedures, including:
 - modification proposal development and processing
 - aircraft recovery procedures
 - work health and safety (WHS)
 - equity, fraud and ethics requirements set out in organisational code of conduct specific to the work described in the performance evidence
- 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
- key features of aircraft structures, including:
 - primary and secondary structures
 - flight controls
 - fairings
 - doors
 - access panels
- key features of aircraft mechanical systems, including:
 - engines
 - landing gear systems
 - hydro-mechanical systems comprising oil, fuel, hydraulic and pneumatic
 - furnishings and safety equipment
 - propellers
- aircraft avionics systems, including:
 - 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.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, an appropriate simulation must be used where the range of conditions reflects realistic workplace situations encountered when providing engineering advice in the modification, maintenance and management of aircraft systems in the ADF technical airworthiness regulatory system.

The candidate must be permitted to refer to relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals, and reference materials.

The candidate must have access to:

- tools, equipment, and materials required to demonstrate the performance evidence above.

Candidate capability of providing the required performance and knowledge evidence must be established via the records in the Maintenance Management Competency Log. Where the individual does not have a Competency Log, evidence of capability can be gathered through direct observation, supervisor's reports, project work, samples and questioning.

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

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.

Links

Companion Volume implementation guides are found in VETNet -

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