Australian Government

Department of Education, Employment and Workplace Relations

MEA128B Provide engineering advice in the modification, maintenance and management of aircraft systems

Release: 2

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Modification History

Minor formatting and editorial changes made. Prerequisite code versions updated.

Unit Descriptor

This unit of competency is part of the Aeroskills Advanced Diploma training pathways. It covers the provision of 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.

Application of the Unit

This unit requires application of engineering knowledge to provide advice on the need for modifications, repairs and maintenance requirements within the airworthiness jurisdiction of the ADF.

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.

Elements and Performance Criteria

1. Provide mechanical systems advice	1.1. ***Independent technical input*** in the maintenance, repair and modification ***aircraft mechanical systems*** and structures is provided when requested by personnel, senior maintenance managers and higher technical authorities 1.2. Aircraft mechanical systems knowledge is utilised to determine aircraft ai 1.3. Knowledge of ***aircraft structures*** is utilised to determine aircraft airworthi
2. Provide avionic systems advice	2.1. Independent technical input in the maintenance and modification design fo systems is provided when requested by maintenance personnel, senior mai and higher technical authorities 2.2. ***Aircraft avionic systems*** knowledge is utilised to determine aircraft airwo
3. Conduct/advise an aircraft recovery	3.1. Battle/incident damage and operational capability of an aircraft is evaluate 3.2. Repair methods and/or limits are determined 3.3. An aircraft recovery is planned

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- oral and written communication
- management
- damage assessment, including repair scheme development and/or extension
- development of modification proposals
- review of maintenance requirements
- OHS, equity, fraud and ethics

Required knowledge

Look for evidence that confirms knowledge of:

- modification proposal development and processing
- 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
- aircraft structure
- aircraft mechanical systems
- aircraft avionic systems
- aircraft recovery procedures
- 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.	
Overview of assessment	A person who demonstrates competency in this unit must be able to assemble and provide engineering advice relating to aircraft and aircraft system maintenance, repair and modification design.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	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.
Context of and specific resources for assessment	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.
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.	
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Independent technical input	Independent technical input may be provided: • utilising subject matter experts and documented technical information • verbally • in writing • in accordance with regulations and organisational policy and procedures • to operators, engineering officers and executive personnel
Aircraft mechanical systems	Aircraft mechanical systems may include: • engines • landing gear systems • hydro-mechanical systems comprising oil, fuel, hydraulic and pneumatic • furnishings and safety equipment • propellers
Aircraft structures	Aircraft structures may include: • primary and secondary structure • flight controls • fairings • doors • access panels
Aircraft avionic systems	Aircraft avionic systems may include: • 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

Unit Sector(s)

Aviation maintenance management

Competency field

Co-requisite units

Not applicable