



Australian Government

Department of Education, Employment and Workplace Relations

MEA318B Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components

Release: 1

MEA318B Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Mechanical AME Certificate IV training pathways. It covers the competencies required to inspect aircraft hydro-mechanical, gaseous and landing gear systems and components. 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.
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Application of the Unit

Application of the unit	This unit requires application of hand skills, standard trade practices and systems knowledge in the inspection of aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components. Applications include hydro-mechanical, mechanical, gaseous and landing gear systems and components fitted to fixed wing aircraft.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	
	MEA302C Remove and install aircraft hydro-mechanical system and landing gear components

Prerequisite units		
	MEA303C	Remove and install aircraft pneumatic system components
	MEA305C	Remove and install aircraft fixed wing flight control system components

Employability Skills Information

Employability skills	This unit contains employability skills.
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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

ELEMENT	PERFORMANCE CRITERIA
<p>1. Inspect hydro-mechanical systems and components.</p>	<p>1.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures.</p> <p>1.2. Hydro-mechanical system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.</p>
<p>2. Inspect landing gear systems and components</p>	<p>2.1. Isolation tags already attached to the system or related systems are checked and aircraft configured, including jacking where necessary, for safe system inspection and operation in accordance with specified procedures.</p> <p>2.2. Landing gear system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.</p>
<p>3. Inspect gaseous systems and components.</p>	<p>3.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures.</p> <p>3.2. Gaseous system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.</p>
<p>4. Inspect mechanical systems and components.</p>	<p>4.1. Isolation tags already attached to the system or related systems are checked and aircraft configured for safe system inspection and operation in accordance with specified procedures.</p> <p>4.2. Mechanical system and system components are visually or physically checked for external signs of defects in accordance with specified procedures.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of all relevant OH&S procedures
- The use of maintenance manuals and documentation to prepare the aircraft and identify requirements for inspection of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components
- Use of hand skills and tools in the inspection, adjustment and troubleshooting of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems
- Use of hand skills and tools in the inspection of hydraulic, fuel, flight control, gaseous and mechanical system components
- Jacking of the aircraft as required for landing gear system inspection
- Use of hand skills and tools in the inspection of landing gear components
- The recognition of external defects in hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components

Required knowledge

Look for evidence that confirms knowledge of:

- How to recognise external defects in hydraulic, fuel, gaseous, flight control, landing gear and mechanical system components
- How to configure the aircraft for inspection of hydraulic, fuel, gaseous, flight control, landing gear and mechanical systems and components
- Inspection and testing requirements for gears, springs and bearings

Evidence Guide

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 inspect a range of hydraulic, fuel, gaseous and mechanical system and landing gear components in accordance with relevant maintenance manual instructions while applying all relevant OH&S procedures and standard processes.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable across a range of inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft hydro-mechanical, gaseous, mechanical and landing gear systems and their components. It is essential that system test procedures take into account all safety precautions applicable to the system being maintained, especially where system operation/switching inter-relates to other systems being maintained. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to inspection is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of this Unit of Competency are being achieved under routine supervision on each type of system and on at least one component of each group listed in the Range Statement, as follows:

- Hydraulic systems - a system and at least one component from each of hydro-mechanical system components 3 and 5
- Fuel systems - a system and at least one component from each of hydro-mechanical system components 4 and 5

EVIDENCE GUIDE	
	<ul style="list-style-type: none"> • Landing gear systems - each listed system 6 to 8 • Landing gear components - one each of 9 to 11 • Gaseous systems - each listed system 12 to 15 and at least one component from each of gaseous system components 16 to 19 • Mechanical systems - a system applicable to each of system types 20 and 21 and at least one component from each of mechanical system components 22 to 24 <p>This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .</p>
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment, using procedures, tools and equipment specified in maintenance documentation. It is also expected that general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
<p>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.</p>	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Hydro-mechanical systems and system components	<p><i>Hydro-mechanical systems include:</i></p> <ol style="list-style-type: none"> 1. Hydraulic systems 2. Fuel systems <p><i>Components of hydro-mechanical systems include:</i></p> <ol style="list-style-type: none"> 3. Hydraulic accumulators, filters, reservoirs, valves, pumps, motors, actuators, regulators, direct reading gauges 4. Fuel system filters, valves, pumps, rigid and flexible storage cells/tanks 5. Rigid and flexible pipelines, hoses and fittings
Landing gear systems and system components (components of landing gear retraction, steering and braking systems are covered by hydro-mechanical and mechanical system components)	<p><i>Landing gear systems include:</i></p> <ol style="list-style-type: none"> 6. Retraction systems 7. Steering systems 8. Brake systems, including anti-skid where applicable <p><i>Landing gear components include:</i></p> <ol style="list-style-type: none"> 9. Wheel assemblies 10. Brake units 11. Struts/oleos
Gaseous systems and system components	<p><i>Gaseous systems include:</i></p> <ol style="list-style-type: none"> 12. Pneumatic 13. Air cycle air conditioning 14. Pressurisation 15. Fire extinguishing <p><i>Gaseous system components include:</i></p> <ol style="list-style-type: none"> 16. Gauges (direct reading), temperature sensors, pressurisation controllers, temperature controllers 17. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers, valves, actuators

RANGE STATEMENT	
	18. Rigid and flexible pipelines and fittings 19. Ducting
Mechanical systems and system components	<p><i>Mechanical systems include:</i></p> <p>20. Mechanical operating and locking systems</p> <p>21. Mechanical flight control systems or the mechanical elements of power-assisted flight control systems</p> <p><i>Mechanical system components include:</i></p> <p>22. Cables, pulleys, guides, fairleads, tension regulators, chains, sprockets</p> <p>23. Control rods, torque tubes, bellcranks, screwjacks, clutches, springs, bearings, gears</p> <p>24. Control sticks, wheels, columns, trim wheels or handles, rudder pedals</p>
Application	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Aviation Maintenance
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Co-requisite units

Co-requisite units	

Co-requisite units		