



Australian Government

Department of Education, Employment and Workplace Relations

MEA319C Inspect gas turbine engine systems and components

Release: 1

MEA319C Inspect gas turbine engine systems and components

Modification History

Knowledge statements expanded - equivalent to previous version.

Unit Descriptor

This unit of competency is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathways. It covers the competencies required to inspect the systems and components of gas turbine engines. The 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 maintenance certification 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, the use of maintenance publications and knowledge of gas turbine engine and system theory to inspect gas turbine engines and engine system components.

Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Refer to unit descriptor

Pre-Requisites

MEA306C Remove and install engine system and components

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 Inspect gas turbine engine systems and components | 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 applicable maintenance manual |
| | 1.2 <i>Gas turbine engine</i> and/or components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual |

Required Skills and Knowledge

Look for evidence that confirms knowledge of:

- gas turbine engine layout and operation:
 - intakes
 - compressors
 - combustion chambers
 - turbines
 - exhaust
 - thrust reversers
 - accessory drives
 - bearings and seals
 - maintenance requirements
- system and component operation, including electrical and instrument system interfaces:
 - fuel control and fuels
 - lubrication and lubricants
 - air distribution
 - starting
 - ignition
 - power augmentation
 - instrumentation:
 - performance indication
 - condition indication
 - warning
 - presentation and interpretation of electronic displays
 - fire warning and extinguishing
 - control system
- engine spin/run procedures, including the operation of APUs
- engine condition monitoring
- relevant OHS practices, including the requirements for the lifting and handling of heavy components
- how to obtain MSDS
- selection and use of PPE
- maintenance requirements
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Look for evidence that confirms skills in:

- applying relevant OHS procedures, including lifting and handling of heavy components
- using MSDS and PPE
- using relevant maintenance documentation and aircraft manuals to:

- recognise through visual/physical inspection external and internal signs of defects/damage to gas turbine engine, components and system components
- assist with testing of gas turbine engine and engine system operation

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 apply hand skills, use maintenance publications and engine and system theory knowledge to inspect gas turbine engines and engine system components on fixed or rotary wing aircraft while applying all relevant safety precautions, in particular those relating to high-energy ignition units.
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 gas turbine engines, components and systems. It is essential that inspection procedures take into account all safety precautions applicable to the system/component 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 engine systems. 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 the unit of competency are being achieved under routine supervision on each of the systems listed in Range Statement Groups 1 to 6 and at least one component of each system. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.
Context of and specific resources for assessment	Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance manuals. It is also expected that general purpose tools, test and ground support equipment found in most routine situations and used to assist in the inspection process would be used where appropriate.

Method of assessment	
Guidance information for assessment	Individuals being assessed who have already attained MEA 314C Inspect, test and troubleshoot gas turbine engine systems and components, will have fully met the criteria for this unit. Log of Industrial Experience and Achievement records relating to MEA314C Inspect, test and troubleshoot gas turbine engine systems and components, may be accepted as also meeting the evidence requirements for this unit.

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.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Gas turbine engine and components	Gas turbine engine may include: 1. Engine change unit, main components and accessories/drives 2. Control system 3. Ignition and starter systems 4. Fuel system 5. Oil system 6. Air system
Application	Application of this unit may relate to: • 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)

Aviation maintenance

Custom Content Section

Not applicable.