



Australian Government

Assessment Requirements for MEA360 Maintain aircraft diesel engines

Release: 1

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Modification History

Release 1 - New unit of competency

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS procedures, including the use of PPE and MSDS
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in aircraft diesel engines, components and system components through visual/physical inspection
- assisting with testing of diesel engine and engine system operation, be able to operate systems, monitor indications, record parameters and recognise correct function
- compiling engine condition monitoring records
- rigging and adjusting engine controls and systems, including FADEC systems
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in diesel engines and engine systems, clearly record details and identify the required rectification actions
- correctly removing and installing diesel engines and engine components.

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with diesel aircraft engines and engine systems. It is essential that system testing procedures take into account all safety precautions associated with diesel engine system operation (including interfaces with FADEC systems) and that awareness be demonstrated of dual inspection requirements associated with work on engine controls. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

This shall be demonstrated through application across a number of engine systems or types.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- WHS procedures associated with engine and propeller maintenance, including lifting and handling of heavy objects and how to obtain PPE and MSDS
- fault diagnosis techniques
- two and four stroke diesel aircraft engines and engine system layout and operation:
 - principles of operation of two and four stroke diesel engines

- component function, construction and materials
- engine operation
- engine power, efficiency and performance
- diesel aircraft engine super/turbo charging systems
- diesel aircraft engine fuels and lubricating oils
- diesel fuel injection systems
- FADEC operation
- diesel aircraft engine induction systems
- diesel aircraft engine cooling systems (liquid and air)
- diesel aircraft engine exhaust systems
- system component operation, including electrical and instrument system interfaces
- dry sump lubrication systems
- removal and installation procedures for diesel aircraft engines and engine components
- diesel aircraft engine maintenance requirements and troubleshooting
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures.

Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general-purpose tools and test equipment found in most routine situations would be used where appropriate.
- The application of testing procedures and functional checks should indicate knowledge of system operation. Engine system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out engine control system checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on at least one (1) item from each of the following groups:
 - two and four stroke diesel aircraft engines, main components and accessories/drives
 - super/turbo charging systems
 - control system, including FADEC (where applicable to enterprise)
 - starter system
 - fuel and air systems
 - cooling system (liquid or air as applicable to enterprise)
 - exhaust system
 - oil system (if dry sump) (may be omitted where not applicable to the enterprise).

- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- 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.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>