



Australian Government

Assessment Requirements for MEA361 Maintain aircraft two stroke petrol 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 two stroke petrol aircraft engines, components and system components through visual/physical inspection
- assisting with testing of two stroke petrol 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
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in two stroke petrol engines and engine systems, clearly record details and identify the required rectification actions
- correctly removing and installing two stroke petrol engine 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 two stroke petrol aircraft engines and engine. It is essential that system testing procedures take into account all safety precautions associated with two stroke petrol engine system operation 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 maintenance, including lifting and handling of heavy objects and how to obtain PPE and MSDS
- fault diagnosis techniques
- two stroke petrol aircraft engine layout and operation:
 - principles of operation of two stroke engines

- component function, construction and materials
- engine operation
- engine power, efficiency and performance
- two stroke aircraft engine fuels, oils and fuel/oil mixing
- components, layout and operation of two stroke petrol aircraft engine:
 - fuel systems
 - ignition systems:
 - magneto
 - coil
 - spark plugs
 - ignition harnesses
 - switches
 - starting systems
 - induction systems
 - cooling systems (liquid and air)
 - exhaust systems
 - electrical and instrument system interfaces:
 - battery charging system
 - tachometer
- removal and installation procedures for two stroke petrol aircraft engines and engine components
- petrol two stroke 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 stroke petrol aircraft engines, main components, including reduction gearboxes and accessories/drives
 - ignition systems
 - control systems
 - starter systems
 - fuel and air systems
 - cooling systems (liquid or air as applicable to enterprise)
 - exhaust systems.
- 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>