



Australian Government

Assessment Requirements for MEAMEC0042 Maintain basic light aircraft engines and propellers

Release: 1

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Modification History

Release 1. Application changed. Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA353 Maintain basic light aircraft engines and propellers.

Performance Evidence

There must be evidence the candidate has completed all the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- maintain, under routine supervision, at least one item from each of the following groups:
 - normally aspirated engine (all types), main components and accessories drives
 - control system
 - starter system
 - fuel and air systems
 - exhaust system
 - oil system (if dry sump) (may be omitted where not applicable to the enterprise)
 - fixed pitch propeller (may include a spinner and the propeller will be made from one of metal, composite or wood)
- while undertaking the above work:
 - take into account all safety precautions associated with piston engine system operation, and awareness of dual inspection requirements associated with work on engine controls
 - apply testing procedures and functional rigging checks
 - operate systems, monitor indications, record parameters and recognise correct function
 - compile engine condition monitoring records
 - rig and adjust engine controls and systems.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- work health and safety (WHS) procedures for engine and propeller maintenance, including lifting and handling of heavy objects
- how to obtain material safety data sheets (MSDSs)
- use of personal protective equipment (PPE)
- engine and propeller maintenance manuals
- engine and propeller maintenance regulatory requirements and standard procedures
- fault diagnosis techniques

- piston engine and engine system layout and operation:
 - four stroke engine theory of operation and performance
 - cylinder configurations
 - construction (components and materials)
 - carburettors and air induction systems
 - fuel injection systems
 - fuels and their characteristics
 - ignition systems
 - lubricating systems and lubricants
 - cooling systems
 - exhaust systems
 - accessory drives and mounts
 - normally aspirated piston engine maintenance requirements and troubleshooting procedures
- system component operation, including the following electrical and instrument system interfaces:
 - magnetos and ignition harnesses
 - spark plugs
 - fuel pumps
 - fuel filters
 - oil pumps
 - oil filters
 - oil tanks
 - vacuum pumps
 - generators
 - starter motors
 - oil pressure gauges (direct reading)
 - temperature gauges (direct reading)
 - tachometers
 - manifold pressure gauges
 - maintenance requirements and troubleshooting procedures
- removal and installation procedures for piston engines and engine components:
 - removal procedures and handling
 - control linkages
 - electrical wiring
 - engine instrument connections
 - installation and rigging
 - ground running
 - system component removal, installation and system testing
- propellers, materials and damage and deterioration criteria:

- fixed pitch propeller types, terminology and theory:
 - tractor or pusher
 - matching to engine and aircraft
 - leading edge or trailing edge
 - blade stations
 - forces acting on a propeller
 - propeller balance
- materials and construction methods:
 - metal propeller metals, construction and surface protection
 - wooden propeller materials, construction and surface protection
 - composite propeller materials, construction and surface protection
 - damage and deterioration
- methods of blending out of minor damage to metal propellers
- propeller removal and installation procedures.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Defence Aviation Safety Authority (DASA) and Civil Aviation Safety Authority (CASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in maintaining basic light aircraft engines and propellers. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to maintaining basic light aircraft engines and propellers
 - tools and equipment specified in maintenance documentation.
 - general-purpose tools and test equipment found in most routine situations.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience and achievement.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet – -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>