



Australian Government

MEAMEC0076 Test aircraft piston engines after repair or overhaul

Release: 1

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Modification History

Release 1. Application changed. Performance Criteria changed. Foundation Skills made explicit. Assessment Requirements clarified. Supersedes and is equivalent to MEA397 Test aircraft piston engines after repair or overhaul.

Application

This unit describes the skills and knowledge required to apply hand skills and use theory knowledge and maintenance publication procedures and/or standard enterprise procedures to test run aircraft piston engines, adjust operating parameters and troubleshoot/rectify faults.

This unit applies to all types of aircraft piston engines that are not installed in an airframe. Work can be performed individually or as a member of a team.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEAMEC0071 Disassemble aircraft piston engines

MEAMEC0072 Repair and overhaul aircraft piston engine cylinder assembly components

MEAMEC0073 Repair and overhaul aircraft piston engine crankcase assembly components

MEAMEC0074 Reassemble aircraft piston engines

MEAMEC0075 Assemble aircraft piston engine quick engine change unit

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare piston engine for test run	1.1 Check documentation to ensure that engine is ready for testing 1.2 Install engine in test rig or test cell, including connection of fuel, oil and electrical supplies and instrumentation while observing relevant

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	work health and safety (WHS) procedures, including the use of material safety data sheets (MSDSs) and personal protective equipment (PPE) 1.3 Fill sump or external oil tank with correct grade and type of lubricating oil 1.4 Fill test rig or cell fuel tank with correct type and grade of fuel 1.5 Fit correct propeller or club to the engine 1.6 Prepare test rig or cell for operation
2. Run and test piston engine performance	2.1 Start engine and check operating parameters in accordance with maintenance manual and standard enterprise procedures while observing relevant WHS procedures, including the use of MSDSs and PPE 2.2 Perform required tests and adjustments to engine performance, in accordance with maintenance manual requirements and standard enterprise procedures, and seek required supervisory guidance for complex testing and adjustments 2.3 Record engine operating parameters and test results in accordance with standard enterprise procedures
3. Troubleshoot piston engine faults	3.1 Use available information from maintenance records and test results, when required, to assist in fault determination 3.2 Use logical processes to ensure efficient and accurate troubleshooting 3.3 Obtain specialist advice, when required, to assist with, or confirm, the fault and rectification requirement 3.4 Locate piston engine component faults and the causes of the faults are clearly identified 3.5 Determine fault rectification requirements to assist in determining if the engine must be returned to the workshop
4. Remove engine from test rig/cell	4.1 Remove engine from test rig or stand in accordance with maintenance manual requirements and standard enterprise procedures while observing relevant WHS procedures, including the use of MSDSs and PPE 4.2 Configure, inhibit and prepare serviceable engines in accordance with maintenance manual requirements and standard enterprise procedures for transport or storage 4.3 Complete required maintenance documentation and modification records and process in accordance with standard enterprise procedures

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	4.4 Return unserviceable engines to workshop in accordance with standard enterprise procedures for rectification or re-work

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance documentation, procedures and manufacturer's instructions.
- Writing skills to complete maintenance documentation.
- Numeracy skills to interpret and communicate data and technical information.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA397 Test aircraft piston engines after repair or overhaul.

Links

Companion Volume implementation guides are found in VETNet –

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

Assessment Requirements for MEAMEC0076 Test aircraft piston engines after repair or overhaul

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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 test aircraft piston engines after repair or overhaul on at least two types of piston engines maintained by the enterprise.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- how to obtain relevant material safety data sheets (MSDSs)
- the use of applicable items of personal protective equipment (PPE) for piston engine testing
- work health and safety (WHS) procedures for piston engine testing
- piston engine fault diagnosis techniques
- piston engine system and component operation
- repair and overhaul procedures and processes
- test rig or test cell operation
- piston engine test requirements
- piston engine operating procedures, parameters and adjustment methods
- use of correct fuels and lubricants.
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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 under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in testing aircraft piston engines after repair or overhaul. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - engine test rig or test cell
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to testing aircraft piston engines after repair or overhaul

- 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.

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