Australian Government

MEA397 Test aircraft piston engines after repair or overhaul

Release: 1

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Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of hand skills, theory knowledge and maintenance publication procedures and/or standard enterprise procedures to test run aircraft piston engines, adjust operating parameters and troubleshoot/rectify faults.

Applications include 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 part of the Mechanical Certificate IV (Component Workshop Maintenance Stream) training pathway. It covers the competencies required to test aircraft piston engines that are not fitted to an airframe after repair or overhaul.

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

Pre-requisite Unit

MEA392	Disassemble aircraft piston engines
MEA393	Repair and/or overhaul aircraft piston engine cylinder assembly components
MEA394	Repair and overhaul aircraft piston engine crankcase assembly components
MEA395	Reassemble aircraft piston engines
MEA396	Assemble aircraft piston engine quick engine change unit

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

essential outcomes.		demonstrate achievement of the element.	
1.	Prepare piston engine for test run	1.1	Documentation is checked to ensure that engine is ready for testing
		1.2	Engine is installed in test rig or test cell, including connection of fuel, oil and electrical supplies and instrumentation while observing relevant work health and safety (WHS) procedures, including the use of material safety data sheets (MSDS) and personal protective equipment (PPE)
		1.3	Sump or external oil tank is filled with correct grade and type of lubricating oil
		1.4	Test rig/cell fuel tank is filled with correct type and grade of fuel
		1.5	Correct propeller or club is fitted to the engine
		1.6	Test rig/cell is prepared for operation
2.	Run and test piston engine performance	2.1	Engine is started and operating parameters are checked in accordance with maintenance manual and standard enterprise procedures while observing relevant WHS procedures, including the use of MSDS and PPE
		2.2	Engine performance is tested and adjusted, where applicable, in accordance with maintenance manual requirements and standard enterprise procedures
		2.3	Engine operating parameters and test results are recorded in accordance with standard enterprise procedures
3.	Troubleshoot piston engine faults	3.1	Available information from maintenance records and test results is used, where necessary, to assist in fault determination
		3.2	Logical processes are used to ensure efficient and accurate troubleshooting
		3.3	Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement
		3.4	Piston engine component faults are located and the causes of the faults are clearly identified
		3.5	Fault rectification requirements are determined to assist in determining if the engine must be returned to the

			workshop
4.	Remove engine from test rig/cell	4.1	Engine is removed from test rig/stand in accordance with maintenance manual requirements and standard enterprise procedures while observing relevant WHS procedures, including the use of MSDS and PPE
		4.2	Serviceable engines are configured, inhibited and prepared in accordance with maintenance manual requirements and standard enterprise procedures for transport or storage
		4.3	Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures
		4.4	Unserviceable engines are returned to workshop in accordance with standard enterprise procedures for rectification or re-work

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Testing and adjustment includes:	• Complex adjusting and testing of engine performance carried out under supervision
Procedures and requirements include:	• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 1 – equivalent to MEA397A Test aircraft piston engines after repair or overhaul

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371