



Australian Government

MEA274 Maintain basic light aircraft electrical systems and components

Release: 2

MEA274 Maintain basic light aircraft electrical systems and components

Modification History

Release 2. Equivalent to MEA274 Maintain basic light aircraft electrical systems and components with amended prerequisite unit name.

Application

This unit of competency requires application of hand skills and the use of maintenance documentation/publications in the maintenance of basic aircraft electrical systems and components involving inspection, limited testing and troubleshooting, and component removal and installation during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Applications include fixed wing aircraft with fixed undercarriage and basic rotary wing aircraft with skids or floats and no powered flight controls powered by either a normally aspirated piston engine or small gas turbine.

The unit is part of the small aircraft maintenance Certificate III and IV Mechatronics training pathways.

Where a Civil Aviation Safety Authority (CASA) licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA246 Fabricate and/or repair aircraft electrical hardware or parts

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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| 1. Inspect basic aircraft electrical systems | 1.1 Relevant maintenance documentation and modification status, including system defect reports where relevant, |
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and components		are used to identify specific inspection requirements	
		1.2	Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual
		1.3	Direct current (DC) electrical system is visually or physically checked for external signs of defects in accordance with applicable maintenance manual while observing all relevant work health and safety (WHS) requirements
		1.4	Defects are correctly identified and reported
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2.	Test/adjust basic aircraft electrical systems	2.1	Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation
		2.2	Electrical system is functionally tested in accordance with maintenance manual for evidence of serviceability or malfunction
		2.3	System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3.	Troubleshoot basic aircraft electrical systems	3.1	Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination
		3.2	Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting to line replacement level
		3.3	Specialist advice is obtained, where required, to assist with the troubleshooting process
		3.4	System faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, and in accordance with standard enterprise procedures
		3.5	Rectification requirements are determined
4.	Remove and install basic aircraft electrical system components	4.1	System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure personnel safety
		4.2	Electrical component removal is carried out in accordance with the applicable maintenance manual

while observing all relevant WHS requirements

- 4.3 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
- 4.4 Removed components are tagged and packaged in accordance with specified procedures
- 4.5 Electrical components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life
- 4.6 Physical installation of electrical components is performed in accordance with the applicable maintenance manual, ensuring appropriate adjustment/alignment with mechanical interface is carried out
- 4.7 System is reinstated to correct operational condition in preparation for testing, as necessary
- 4.8 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

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.

Applicable electrical systems include:

- DC power generation, regulation and distribution systems
- Piston engine and gas turbine engine ignition and starting systems (where applicable to the enterprise)
- DC electrical systems, such as flaps, including related motors and actuators
- Aircraft lighting
- Aircraft main battery

Applicable electrical components include:

- DC generators, and alternator/rectifier generators, and components of related single generator regulation and distribution systems
- Motors
- Actuators
- Piston engine and gas turbine engine ignition and starting system components
- Aircraft batteries
- Aircraft lighting components, such as bulbs, lenses, switches and rheostats

Procedures and requirements include:

- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2. Equivalent to MEA274 Maintain basic light aircraft electrical systems and components.

Links

Companion Volume implementation guides are found in VETNet -

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