



Australian Government

MEA227 Test and troubleshoot aircraft electrical systems and components

Release: 2

MEA227 Test and troubleshoot aircraft electrical systems and components

Modification History

Release 2. Equivalent to MEA227 Test and troubleshoot aircraft electrical systems and components with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to test and troubleshoot aircraft electrical systems and components of fixed and rotary wing aircraft during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is part of the Avionic Certificate IV (Aircraft Maintenance Stream) training pathways and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway

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).

Where a 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

MEA223 Inspect aircraft electrical systems and components

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. Prepare for troubleshooting | 1.1 Relevant maintenance documentation and modification status, including system defect reports, where relevant, |
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- are used to identify an unserviceability
2. Test/adjust 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 while observing all relevant work health and safety (WHS) requirements
 - 2.3 System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
 3. Troubleshoot 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
 - 3.5 Rectification requirements are determined

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.

Electrical systems and components include:

- All related electrical hardware, looms and cables
- Alternating current (AC) and/or direct current (DC) power generation, regulation and distribution systems
- Rotary and static inverters and transformer rectifier (TR)

units

- Air cycle air conditioning and pressurisation systems
- Flight and engine control systems
- Ignition and starting systems
- Fire/smoke detection and extinguishing
- Lighting (internal and external)
- Master and caution warning systems
- Equipment cooling and ventilation
- Equipment and furnishing
- Position indicating systems
- Fuel storage and distribution
- Landing gear indication and anti-skid
- Main batteries and battery bus ties/interlocks
- Propeller control systems (where applicable to the enterprise)
- Ice and rain protection (where applicable to the enterprise)
- Wastewater (where applicable to the enterprise)
- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Procedures and requirements include:

Unit Mapping Information

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Links

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