



Australian Government

MEA211 Inspect, test and troubleshoot advanced aircraft electrical systems and components

Release: 1

MEA211 Inspect, test and troubleshoot advanced aircraft electrical systems and components

Modification History

Release 1 - New unit of competency

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 inspect, test and troubleshoot advanced aircraft electrical systems and components of fixed and rotary wing aircraft that have advanced electrical systems, 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 pathway 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

MEA203	Remove and install advanced aircraft electrical system components
MEA246	Fabricate and/or repair aircraft electrical components 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.
1. Inspect advanced aircraft electrical systems and components	1.1 Relevant maintenance documentation and modification status, including system defect reports where relevant, 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 Electrical systems are 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
2. Test/adjust advanced 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 advanced 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, in accordance with standard enterprise procedures

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 their components include:

- Direct current (DC) and alternating current (AC) power generation and distribution systems and components, including generators, alternators, starter generators and related control, regulation and distribution system components
- Transformer rectifier units and inverters
- Batteries and related bus tie or interlock system components and battery temperature monitoring systems
- Motors and actuators
- Components of gas turbine and/or piston engine ignition and starting systems (where applicable to the enterprise)
- External/internal lights
- Electrical components specific to systems, such as air cycle air conditioning, combustion heating, equipment cooling, anti-icing and de-icing, landing gear, anti-skid, flight control, master and central warning, fuel storage and distribution, fire warning and extinguishing and engine/propeller control

Procedures and requirements include:

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

Unit Mapping Information

Release 1 – equivalent to MEA211C Inspect, test and troubleshoot advanced aircraft electrical systems and components

Links

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