



Australian Government

MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware/components

Release: 2

MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware/components

Modification History

Release 2. Equivalent to MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware/components with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and relevant maintenance publications and documentation to remove and install a range of electrical components and electrical hardware under the guidance of a qualified person, including both on and off-aircraft work during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is part of the Avionic Certificate II training pathway. It covers the competencies required for the removal and installation under qualified person guidance of a range of aircraft electrical components and items of hardware that can have bolted, soldered or plug connections.

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

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

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. Prepare to remove aircraft electrical hardware	1.1 The removal task is planned under qualified person guidance using applicable maintenance documentation and enterprise procedures 1.2 System safety is confirmed with the qualified person
2. Remove aircraft electrical hardware	2.1 Physical removal of electrical hardware is carried out in accordance with enterprise procedures and applicable maintenance documentation while observing all relevant work health and safety (WHS) requirements
3. Complete aircraft electrical hardware removal process	3.1 Required documentation is accurately completed and correctly processed in accordance with enterprise procedures 3.2 Removed components are tagged, packaged or discarded in accordance with specified procedures
4. Prepare to install aircraft electrical hardware	4.1 The installation task is planned under qualified person guidance using applicable maintenance documentation and enterprise procedures 4.2 Electrical hardware components to be installed are checked to confirm correct part numbers
5. Install aircraft electrical hardware	5.1 Physical installation of electrical hardware is carried out in accordance with enterprise procedures and applicable maintenance documentation
6. Complete aircraft electrical hardware installation process	6.1 Required documentation is accurately completed and correctly processed in accordance with 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.

Electrical hardware includes:

- Switches, relays, lamps, terminal blocks, current limiters, circuit breakers, fuses, sockets, potentiometers, capacitors, inductors, magnetic amplifiers, transformers, rheostats, resistors and diodes, miscellaneous sensors and minor components hard mounted throughout the aircraft, busbars, lugs, ferrules, splices, connectors, and electrical, electronic cables and looms
- Oxygen systems and components, and fuel tank components and integrated hardware are not included

Unit Mapping Information

Release 2. Equivalent to MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware/components

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 MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware/components

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS practices
- using enterprise procedures, applicable maintenance documentation and aircraft publications relating to the electrical system and components being worked on
- the preparation and termination of electrical cables to aircraft industry standards, using:
 - crimping techniques
 - soldering techniques
 - solder sleeve joints
- the correct identification of aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- electrical loom and harness installation ensuring minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards
- positive identification of miscellaneous electrical hardware and/or components.

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. It is essential that applicable cleanliness requirements and WHS safety precautions are fully observed, and an awareness of electrostatic discharge procedures.

Evidence of transferability of skills and knowledge related to enterprise procedures associated with removal and installation is essential.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- component attachment methods
- electrostatic discharge procedures
- connection of hardware, plugs and terminals points
- wire marking, terminal block identification and plug/socket numbering systems.

Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that applicable general-purpose tools, and test and ground support equipment found in most routine situations would be used where appropriate.
- An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under qualified person guidance on a range of the electrical components/hardware listed in the Range of Conditions that are applicable to the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
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