



Australian Government

MEA201 Remove and install miscellaneous aircraft electrical hardware/components

Release: 2

MEA201 Remove and install miscellaneous aircraft electrical hardware/components

Modification History

Release 2. Equivalent to MEA201 Remove and install miscellaneous aircraft electrical hardware/components with amended prerequisite codes.

Application

This unit of competency requires application of skills in basic soldering and in crimping associated with the removal and installation of miscellaneous electrical hardware and components fitted to fixed or rotary wing aircraft during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is part of all Avionic Certificate IV 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

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.

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| 1. Remove aircraft electrical hardware | 1.1 System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure personnel safety |
| | 1.2 Removal of electrical hardware is carried out in accordance with the applicable maintenance manual observing all relevant work health and safety (WHS) requirements |
| | 1.3 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures |
| | 1.4 Removed components are tagged, packaged or discarded in accordance with specified procedures |
| 2. Install aircraft electrical hardware | 2.1 Electrical hardware components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life |
| | 2.2 Physical installation of electrical hardware is carried out in accordance with the applicable maintenance manual |
| | 2.3 System is reinstated to correct physical condition in preparation for testing, as necessary |
| | 2.4 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.

Hardware connection methods include:	• Bolted • Soldered • Plug connectors
Types of electrical hardware include:	• 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
Basic soldering and crimping	• The work will include the application of basic soldering and crimping skills associated with removal and installation of electrical hardware.
Procedures and requirements include:	• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

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>

Assessment Requirements for MEA201 Remove and install 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:

- the preparation and termination of electrical cables to aircraft industry standards, using crimping techniques, soldering techniques and solder sleeves joints
- the correct interpretation of aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- inspection of electrical looms and harness pre and post-removal and installation to ensure 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 in all aircraft systems.
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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
- connection of hardware and plugs
- application of relevant WHS practices
- the use of approved maintenance documentation and aircraft publications relating to miscellaneous aircraft electrical hardware and components
- electrical wiring used in aircraft and wire marking
- plug/socket pin numbering and terminal block identification
- cable and loom installation requirements
- crimping tools and crimp terminals
- soldering techniques and the use of solder sleeve joints
- electrical fundamentals.

Assessment Conditions

- Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine maintenance 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.
- It is essential that applicable cleanliness requirements and WHS safety precautions are fully observed, including awareness of electrostatic discharge procedures.
- Evidence of transferability of skills and knowledge related to removal and installation is essential.
- 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 are being achieved under routine supervision on each of the connection methods:
 - bolted
 - soldered
 - plug connectors.
- 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 Implementation Guide).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.

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