



Australian Government

Department of Education, Employment and Workplace Relations

MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware/components

Release: 2

MEA238B Perform routine removal and installation of miscellaneous aircraft electrical hardware_components

Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated.

Unit Descriptor

This unit of competency 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 ADF and CASA.

Application of the Unit

This unit 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. Applications include both on and off-aircraft work.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

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| 1. Prepare to remove aircraft electrical hardware | 1.1. The removal task is planned under qualified person guidance using applicable 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 applicable procedures and applicable maintenance documentation |
| 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 applicable 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 identification |
| 5. Install aircraft electrical hardware | 5.1. Physical installation of electrical hardware is carried out in accordance with applicable 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 |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS 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

Required knowledge

Look for evidence that confirms 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

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to remove and install a range of electrical components/hardware while observing electrostatic discharge precautions and all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>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 OHS safety precautions are fully observed, and an awareness of electrostatic discharge procedures.</p> <p>Evidence of transferability of skills and knowledge related to enterprise procedures associated with removal and installation is essential. 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.</p> <p>A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under qualified person guidance on a range of the electrical components/hardware listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.</p>
Context of and specific resources for assessment	Competency should be assessed in the work environment, 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 situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Application	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none">• scheduled or unscheduled maintenance involving aircraft electrical hardware/components that is performed under qualified person guidance in accordance with enterprise procedures and applicable maintenance documentation• work undertaken either autonomously or as part of a team and under the guidance of a qualified person. Routine work is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course of procedure). All work outcomes are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality• the application of enterprise procedures associated with basic soldering and crimping skills required for the removal and installation of electrical hardware• the demonstration of competency in groups that include bolted, soldered, and plug connections
Electrical hardware may include:	<p>Electrical hardware may include:</p> <ul style="list-style-type: none">• 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 Sector(s)

Aviation maintenance

Competency field

Co-requisite units

Not applicable