



Australian Government

Department of Education, Employment and Workplace Relations

MEA265A Remove and install general aircraft electrical hardware

Revision Number: 2

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Modification History

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

Unit Descriptor

This unit covers the competencies required for the removal and installation of a range of general electrical hardware and components found in various systems of both fixed and rotary wing aircraft that are within the privileges of the Aircraft Maintenance Engineer A Licence. This unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer A Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

This unit requires application of hand skills in the removal and installation of electrical hardware.

Applications include items of general electrical hardware fitted to fixed or rotary wing aircraft.

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. Remove general aircraft electrical hardware | <ul style="list-style-type: none">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 safety1.2. Removal of electrical hardware is carried out in accordance with the applicable maintenance manual1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures1.4. Removed components are tagged, packaged or discarded in accordance with specified procedures |
| 2. Install general aircraft electrical hardware | <ul style="list-style-type: none">2.1. Electrical hardware components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life2.2. Physical installation of electrical hardware is carried out in accordance with the applicable maintenance manual2.3. System is reinstated to correct physical condition in preparation for testing, as necessary2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS procedures
- using approved maintenance documentation and aircraft publications relating to miscellaneous aircraft electrical hardware and components
- recognising defects in and deterioration of electrical cables to aircraft industry standards, including crimped and soldered joints
- correctly interpreting aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- inspecting 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
- positively identifying miscellaneous electrical hardware and/or components in all aircraft systems
- plug connector pin removal and insertion

Required knowledge

Look for evidence that confirms knowledge of:

- component attachment methods
- connection of hardware and plugs
- relevant OHS procedures
- 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
- procedures for removal and insertion of plug connector pins
- electrical fundamentals and related mathematical and physics principles

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 apply hand skills, use specialist tools and use maintenance publications to remove and install items of general aircraft electrical hardware that are within the privileges of the CASA Aircraft Maintenance Engineer A Licence while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that applicable cleanliness requirements and OHS 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. 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. 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 supervision but without intervention on each of the connection methods 1 and 2 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.
Context of and specific resources for assessment	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 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.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Removal and installation of electrical hardware	Removal and installation of electrical hardware involves one or more of the following connection methods: 1. Bolted 2. Plug connectors
Electrical hardware	Electrical hardware includes: • switches, relays, lamps, terminal blocks, current limiters, circuit breakers, fuses, sockets, potentiometers, capacitors, inductors, magnetic amplifiers, transformers, rheostats, miscellaneous sensors and minor components hard mounted throughout the aircraft, busbars, lugs, ferrules, splices, connectors and electrical, electronic cables and looms
Application	Application of this unit may relate to: • scheduled maintenance up to the level of a weekly check, or to unscheduled maintenance involving component removal and installation
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Aviation maintenance

Competency field

Co-requisite units

Not applicable