



Australian Government

MEA246C Fabricate and/or repair aircraft electrical hardware or parts

Revision Number: 2

MEA246C Fabricate and/or repair aircraft electrical hardware or parts

Modification History

Minor formatting and editorial changes made.

Unit Descriptor

This unit of competency is part of all Avionic Certificate IV training pathways. It is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required to fabricate and repair aircraft electrical hardware or parts. The unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer 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 and knowledge of wiring standards and specifications to fabricate aircraft electrical looms, harnesses and cables.

Applications include aircraft maintenance hangars and workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA201B	Remove and install miscellaneous aircraft electrical hardware/components
MEA260B	Use electrical test equipment

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.
---	--

Elements and Performance Criteria

- | | |
|--|--|
| 1. Interpret specifications and organise materials | 1.1. Specifications are interpreted to determine the dimensions and procedure for fabrication
1.2. Appropriate materials, tools and equipment are selected and prepared for the particular specification requirements |
| 2. Fabricate/repair electrical components or parts | 2.1. Assembly or fabrication jigs, where applicable, are aligned to ensure accurate fabrication of components
2.2. <i>Components or parts</i> are fabricated in accordance with required specifications |
| 3. Test fabricated/repaired components or parts | 3.1. Test equipment and rigs are used, where applicable, to confirm serviceability of finished components
3.2. Fabricated components are tagged, sealed and packaged within specified procedures |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS practices, including the use of PPE and reference to MSDS
- using approved repair/fabrication procedures and processes relating to electrical cables, harnesses, antenna leads and aerial components
- recognising the integrity/security of electrical component crimps, wire wrapping, joints and plug/connector pins
- constructing cables, harnesses and looms, including wire marking, to approved industry standards
- performing component testing to assess post construction serviceability

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- aircraft wiring specifications and standards
- standard repair methods for:
 - electrical cables
 - ignition harnesses
 - fire warning system harnesses
 - coaxial cables, such as antenna leads
 - aerial components
- electrical plugs and connectors
- soldering methods
- fabrication methods for the above wiring and cables
- wire marking methods
- assembly of electrical cables into wiring looms
- relevant OHS procedures
- how to obtain relevant MSDS
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

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 fabricate aircraft electrical looms, cables and harnesses in accordance with applicable standards and specifications while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other areas that require similar techniques. It is essential that the general aspects of material specification and selection, measurement and fabrication/manufacture are related to specific aircraft component applications. Evidence of knowledge about individual components and their links with systems will be necessary to supplement evidence of ability to interpret requirements and fabricate components 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 routine supervision on a representative range of tasks from Groups 1 to 4 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 work environment or simulated work environment using tools and equipment specified by aircraft in the maintenance manuals. It is also expected that general purpose tools and test 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
Components or parts	Components or parts may include electrical looms, harnesses and cables associated with: 1. Power distribution 2. Ignition 3. Control circuits 4. Signal circuits
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
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