



Australian Government

MEA239 Fabricate aircraft electrical looms and harnesses

Release: 2

MEA239 Fabricate aircraft electrical looms and harnesses

Modification History

Release 2. Equivalent to MEA239 Fabricate aircraft electrical looms and harnesses with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and maintenance publications in aircraft hangars and workshops to fabricate aircraft electrical looms and harnesses under qualified person guidance for general use in electrical systems 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.

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 Performance criteria describe the performance needed to

essential outcomes.	demonstrate achievement of the element.
1. Prepare to fabricate aircraft electrical looms and harnesses	1.1 Appropriate materials, tools and equipment are selected and prepared for the particular task in accordance with applicable maintenance documentation, enterprise procedures and under qualified person guidance 1.2 Assembly or fabrication jigs, where applicable, are aligned to ensure accurate fabrication of components
2. Fabricate aircraft electrical looms and harnesses	2.1 Components or parts are fabricated in accordance with qualified person guidance, applicable maintenance documentation and enterprise procedures while observing all relevant work health and safety (WHS) requirements
3. Perform routine tests on aircraft electrical looms and harnesses	3.1 Under qualified person guidance test equipment and/or rigs are used, where applicable, to confirm serviceability of finished components
4. Complete the fabrication process with regard to aircraft electrical looms and harnesses	4.1 Fabricated components are tagged, sealed and packaged within specified 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.

Components or parts include:

- Electrical looms, harnesses and cables **except** for:
 - data bus cables
 - co-axial cables
 - fibre optic cables
 - fire detection/extinguishing systems
 - oxygen systems
 - fuel tanks and integrated hardware

Unit Mapping Information

Release 2. Equivalent to MEA239 Fabricate aircraft electrical looms and harnesses

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 MEA239 Fabricate aircraft electrical looms and harnesses

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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 approved fabrication procedures and processes relating to electrical looms, cables, and harnesses
- recognising the integrity/security of electrical component crimps, joints and plug/connector pins
- fabricating cables, harnesses and looms, including wire marking, to approved industry standards
- under qualified person guidance performing testing to assess post-construction serviceability according to enterprise procedures.

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 be related to specific aircraft component applications to the extent necessary to unambiguously understand expert guidance.

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:

- electrical wire gauges and standards
- wire marking conventions and procedures
- wire terminations, soldering and crimping.

Assessment Conditions

- 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 applicable general-purpose tools and test equipment found in most routine situations would be used where appropriate.

- Evidence of knowledge about individual components and their links with systems will be necessary to supplement evidence of ability to interpret qualified person guidance and enterprise procedures to fabricate looms, harnesses and cables before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- Safety precautions applicable to the manufacturing of electrical looms, harnesses and cables are to be fully observed. An understanding of system operation as it relates to the work must be demonstrated before undertaking any action, to ensure safety and quality issues are addressed.
- 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 representative range of electrical loom, cable and harness fabrication tasks with the exception of the items listed in the Range of Conditions. 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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