



Australian Government

Assessment Requirements for MEAAVI0040 Modify and repair aircraft component multi-layer printed circuit boards

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Modification History

Release 1. Application changed. Elements and Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA263 Modify/repair aircraft component multi-layer printed circuit boards.

Performance Evidence

There must be evidence the candidate has completed all the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- modify or repair aircraft component multi-layer printed circuit boards comprising at least eight of the following substrate materials and components and using approved repair procedures and processes relating to multi-layer circuit board:
 - capacitors
 - resistors
 - wires
 - semiconductors
 - inductors
 - transformers
 - switches
 - connectors
 - multi-pin ICs
 - terminal posts
 - heat-sink materials
 - electrostatic sensitive devices
- recognise the following for circuit boards being repaired or modified:
 - unacceptable soldered connections
 - damaged circuit card components
 - circuit tracks integrity
 - substrate damage
 - edge connector condition
- rework unacceptable printed circuit board soldered connections via acceptable de-soldering and soldering techniques on the circuit boards being modified or repaired
- follow substrate abrasion and rebuilding techniques and precautions associated with handling and assembly of electrostatic and temperature sensitive devices, and safety precautions associated with beryllium materials and use of fluxes and solvents, as relevant to the circuit boards being modified or repaired.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component operation
- basic principles and functions relating to electrical and electronic components on printed circuit boards
- substrate materials
- types of conformal coating
- types of soldering equipment and solders used in track repair and component assembly
- de-soldering techniques
- optical equipment and tools used in multi-layer printed circuit board repair
- how to obtain material safety data sheets (MSDS)
- work health and safety (WHS) procedures for modifying or repairing aircraft component multi-layer circuit board
- maintenance manuals for modifying or repairing aircraft component multi-layer circuit board
- relevant regulatory requirements and standard procedures
- procedures and standards for repair of printed circuit card assemblies, including a range of general engineering hand skills in addition to specific high-reliability soldering skills.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (DASA and CASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in modifying or repairing aircraft component multi-layer circuit boards. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to modifying or repairing aircraft component multi-layer circuit boards
 - tools and equipment specified in maintenance manuals
 - general and special-purpose test equipment found in most routine situations.

The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience and achievement.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>