Australian Government

# Assessment Requirements for MEA263 Modify/repair aircraft component multi-layer printed circuit boards

**Release: 2**

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## Modification History

Release 2. Equivalent to MEA263 Modify/repair aircraft component multi-layer printed circuit boards with amended prerequisite codes.

## 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 repair procedures and processes relating to multi-layer circuit cards
- recognising unacceptable soldered connections, damaged circuit card components, circuit tracks integrity, substrate damage and edge connector condition
- applying static-safe work area practices
- reworking unacceptable printed circuit board soldered connections via acceptable de-soldering and soldering techniques
- disassembling and assembling printed circuit board cards to approved industry standards and prescribed specifications
- performing printed circuit board tests using relevant test equipment and processes to isolate printed circuit board track faults and assess serviceability state post repair
- correctly disassembling, preparing repair area, reworking the card to industry standards, replacing faulted components and assembling card for post-repair inspection and testing

It is essential that substrate abrasion and rebuilding techniques and precautions associated with handling and assembly of electrostatic and temperature sensitive devices are fully observed, understood and complied with. A high level of awareness of safety precautions associated with beryllium materials and use of fluxes and solvents is to be demonstrated.

Evidence of transferability of skills and knowledge related to multi-layer printed circuit card assembly and repair is essential before undertaking any action. This may be demonstrated through application of the techniques involved across a representative range of circuit card substrate materials and attached components. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.

## 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:

- component operation
- basic principles/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 MSDS
- WHS procedures
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures.

## Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that applicable general and special-purpose test equipment found in most routine situations would be used where appropriate.
- The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- 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 routine supervision on a representative range of cards with various substrate materials and components. 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).

## Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371