



Australian Government

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

Release: 1

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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.

Application

This unit describes the skills and knowledge required to apply hand skills (including those required to gain access to inner layers and repair outer layers after track repair, and high reliability hand soldering), and knowledge of standard practices and techniques in the repair of multi-layer printed circuit boards from aircraft avionic components that are repaired in aviation workshops during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEAAVI0038 Use electronic test equipment

MEA296 Use electrical test equipment in aviation maintenance activities

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Inspect multi-layer printed circuit boards and associated components	1.1 Interpret required maintenance documentation, including component defect reports and match parts and serial numbers 1.2 Prepare work area and circuit board assemblies in accordance with standard enterprise procedures to allow for effective detailed inspection of all substrate, circuit tracks, edge connectors and attached components,

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	taking into account any static discharge procedures 1.3 Visually or physically inspect circuit board assemblies for physical integrity of substrate, circuit tracks, edge connectors and attached components in accordance with maintenance documentation while observing all relevant work health and safety (WHS) requirements 1.4 Establish modification status to assist in determining repair requirements 1.5 Identify and report defects in accordance with standard enterprise procedures
2. Test or adjust multi-layer printed circuit boards and associated components	2.1 Prepare and connect circuit board assemblies to the appropriate test facility in accordance with approved procedures, or prepare and connect circuit board assemblies in situ to allow required test procedures to be performed 2.2 Perform functional testing on circuit board assemblies for evidence of serviceability or malfunction in accordance with normal trade practice and maintenance documentation 2.3 Electronically or physically adjust or align circuit board assemblies, attached hardware and electronic components in accordance with maintenance manuals or other prescribed procedures
3. Troubleshoot multi-layer printed circuit cards and associated components	3.1 Use required maintenance documentation, physical inspection and test results to assist in fault determination 3.2 Troubleshoot using maintenance manual fault diagnosis guides, logical processes and test equipment 3.3 Locate component faults and identify and record causes of faults in required maintenance documentation 3.4 Determine required for rectification of faults
4. Dismantle multi-layer printed circuit cards and associated components	4.1 Remove conformal or protective coatings from the circuit board assembly to the extent required to effect necessary repairs and in accordance with maintenance manuals, industry or enterprise standards as applicable 4.2 Observe WHS requirements at all times during maintenance procedures and use required material safety data sheets (MSDSs) and personal protective equipment (PPE) 4.3 Dismantle circuit board assembly to the extent necessary to allow repair of all identified faults 4.4 Tag and dispatch parts for processing in accordance with specified

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	procedures 4.5 Package and store parts for retention and refitment in accordance with standard enterprise procedures to avoid physical and electrostatic damage 4.6 Pack and process parts for disposal in accordance with statutory requirements pertaining to dangerous goods
5. Assemble multi-layer printed circuit boards and associated components	5.1 Collect parts removed for access and replacement parts, ensuring appropriate modification status, component tolerances and assembly configuration is maintained 5.2 Replace conformal or protective coatings to the required standard of the equipment manufacturer or industry standard 5.3 Ensure rework techniques are in accordance with industry approved procedures, and observe required WHS precautions, including use of MSDS and PPE 5.4 Assemble printed circuit board and associated components in accordance with maintenance manuals, and ensure all electrical joints meet the required standard of the equipment manufacturer or industry standard 5.5 Rework circuit substrate material, circuit tracks, edge connectors and through-hole eyelets as required to restore printed circuit board to a serviceable condition

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance manuals.
- Writing skills to report on defects
- Numeracy skills to interpret technical information.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA263 Modify/repair aircraft component multi-layer printed circuit boards.

Links

Companion Volume implementation guides are found in VETNet -

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