



Australian Government

MEAAVI0053 Repair and overhaul aircraft display, control and distribution system components

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 MEA283 Repair or overhaul aircraft display, control and distribution system components.

Application

This unit describes the skills and knowledge required to apply hand skills and use test equipment and knowledge of pulse, analogue and digital theory to repair or overhaul pulse system components from aircraft control and distribution systems during scheduled or unscheduled maintenance. Applications include display, control and distribution system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops. Work may be performed individually or as part of a team.

Repair of circuit boards is covered by MEAAVI0039 Modify and repair aircraft component single-layer printed circuit boards and MEAAVI0040 Modify and repair aircraft component multi-layer printed circuit boards.

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

MEA261 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. Determine requirements	1.1 Interpret display, control and distribution system component defect reports (removal tags) or customer orders and match by part and serial

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	numbers to identify requirements 1.2 Prepare circuitry and connect to test equipment to perform functional testing or cycle through prescribed test procedures for evidence of serviceability or malfunction in accordance with the maintenance documentation 1.3 Establish modification status to assist in determining the overhaul requirements for the components 1.4 Identify and document extent of overhaul or repair in accordance with standard enterprise procedures
2. Troubleshoot display, control and distribution system components	2.1 Use available information from maintenance records and inspection and test results as required to assist in fault determination 2.2 Troubleshoot display, control and distribution system components using maintenance manual fault diagnosis guides and logic processes 2.3 Locate faults and identify and record causes of faults in required maintenance documentation 2.4 Determine requirements for fault rectification in accordance with standard enterprise procedures
3. Dismantle and inspect display, control and distribution system components	3.1 Dismantle component parts in accordance with maintenance manuals while observing all relevant work health and safety (WHS) requirements 3.2 Assess component parts for serviceability in accordance with maintenance documentation 3.3 Tag parts requiring specialist repair and specify repair instructions 3.4 Compile and process parts lists in accordance with standard enterprise procedures
4. Repair and/or modify display, control and distribution system components	4.1 Repair or replace component parts, using high precision, high reliability soldering techniques, in accordance with maintenance documentation 4.2 Make required modifications to components or parts in accordance with relevant manufacturers' bulletins or procedures
5. Assemble, test and adjust display, control and distribution system components	5.1 Assemble component parts in accordance with specified tolerances and maintenance documents 5.2 Test assembled components and adjust or align in accordance with maintenance documentation and using appropriate test equipment 5.3 Complete and process required maintenance documentation and

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	modification records in accordance with standard enterprise procedures

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, inspection procedures and specifications (allowable limits).
- Writing skills to record and report on defects and faults and their causes.
- Numeracy skills to interpret and communicate technical information, perform and interpret technical testing and interpret digital instrument display indications, information and symbols.

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 MEA283 Repair or overhaul aircraft display, control and distribution system components.

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 MEAAVI0053 Repair and overhaul aircraft display, control and distribution system components

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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:

- repair and overhaul aircraft display, control and distribution system components during scheduled or unscheduled maintenance under routine supervision on components that are applicable to the enterprise, from at least two of the following systems:
 - display systems, including electronic flight instrument system (EFIS), engine indicating and crew alerting system (EICAS) and electronic centralized aircraft monitor (ECAM)
 - automatic flight control system (AFCS)
 - autopilots (digital and analogue)
 - flight director (digital and analogue)
 - flight management.
- recognise the serviceability state and repair or overhaul requirements for components from the following:
 - digital electronic instruments/display systems
 - digital flight controllers and directors
 - digital AFCS/autopilot systems
 - flight management systems
 - analogue components of control and distribution systems
- perform functional testing by applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate component faults and assess post-repair/overhaul serviceability for the components being repaired and overhauled
- apply testing procedures, cleanliness requirements and safety precautions at all times and as relevant to the systems or components being maintained.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component and system operation

- the basic function and operation of components as follows to enable testing for fault isolation or confirmation, to determine repair or overhaul requirements, and serviceability status post-repair or overhaul:
 - digital electronic instruments/display system components
 - digital flight controllers and directors
 - digital AFCS/autopilot system components
 - flight management system components
 - analogue components of control and distribution systems
- basic principles/functions, relating to the above systems/components and associated with:
 - advanced analogue fundamentals, including video display generation techniques
 - digital fundamentals
- alternating current (AC) and direct current (DC) electrical systems
- work health and safety (WHS) requirements for display, control and distribution systems and components
- maintenance documentation for display, control and distribution systems and components.

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 repairing or overhauling aircraft display, control and distribution system components. 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 repairing or overhauling aircraft display, control and distribution system components
 - tools and equipment specified in maintenance documentation
 - general and special-purpose tools and test equipment.

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

Assessment should be made across a sufficient number of components to establish the ability to apply attained skills and knowledge across the full range of display, control and distribution system components with the aid of applicable maintenance manuals and data.

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

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