



Australian Government

MEAAVI0054 Repair and overhaul aircraft instrument 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 MEA284 Repair or overhaul aircraft instrument system components.

Application

This unit describes the skills and knowledge required to apply hand skills and use knowledge of component repair and overhaul procedures relating to fixed and rotary wing aircraft instrument system components that are repaired or overhauled in aviation maintenance workplaces during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Repair of circuit boards is covered by MEA262 Modify/repair aircraft component single layer printed circuit boards and MEA263 Modify/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

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. Determine requirements	1.1 Interpret component defect reports (removal tags) or customer orders and match by part and serial numbers to identify requirements 1.2 Inspect and operate system components through prescribed test

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	procedures to establish serviceability or confirm defects 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 instrument system components	2.1 Use available information from maintenance records and test results as required to assist in fault determination 2.2 Troubleshoot aircraft instrument system components using logical processes 2.3 Obtain required specialist or supervisory advice to assist with or confirm faults and rectification requirements 2.4 Locate system component faults and identify causes of faults in accordance with standard enterprise procedures 2.5 Determine fault rectification requirements to assist in planning repair
3. Dismantle and inspect instrument system components	3.1 Dismantle system 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 accurately specify repair instructions 3.4 Compile and process parts lists in accordance with standard enterprise procedures
4. Repair and/or modify instrument system components	4.1 Repair or replace system component parts in accordance with maintenance documentation 4.2 Make required modifications to components or parts in accordance with relevant manufacturer's bulletins or procedures
5. Assemble, test and adjust instrument system components	5.1 Assemble component parts in accordance with specified tolerances and maintenance documents 5.2 Test assembled components and adjust or calibrate system components to operate within prescribed specifications 5.3 Tag, seal and package finished components in accordance with specified procedures 5.4 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 MEA284 Repair or overhaul aircraft instrument 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 MEAAVI0054 Repair and overhaul aircraft instrument 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 or overhaul aircraft instrument system components during scheduled or unscheduled maintenance on at least two general instrument components from the following groups:
 - mechanical instruments
 - electro-mechanical instruments
 - sensors.
- recognise the serviceability state and repair or overhaul requirements for:
 - mechanical instruments
 - electro-mechanical instruments
 - instrument sensors
- perform testing by applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate components faults and assess post-repair or overhaul serviceability
- 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 the following components to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post-repair or overhaul:
 - mechanical instruments
 - electro-mechanical instruments
 - instrument sensors
- basic principles and functions relating to the above components and associated with:
 - alternating current (AC) and direct current (DC) synchronous systems

- servomechanisms
- gyroscopes
- vacuum and pressure-based indication methods (pitot/static and pressurisation)
- advanced analogue fundamentals
- electro-mechanical sensor signal generation
- work health and safety (WHS) requirements for repairing or overhauling aircraft instrument system components
- maintenance publications for repairing or overhauling aircraft instrument system 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 instrument system components. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - required workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to repairing or overhauling aircraft instrument 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.

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

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