



Australian Government

MEAAVI0052 Repair and overhaul aircraft pulse system components

Release: 1

MEAAVI0052 Repair and overhaul aircraft pulse system components

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 MEA282 Repair or overhaul aircraft pulse 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 components from fixed and rotary wing aircraft pulse systems that are repaired or overhauled in aviation maintenance workshops during scheduled or unscheduled maintenance. 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

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 pulse system component defect reports (removal tags) or customer orders and match by part and serial 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 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 pulse 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 pulse 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 pulse 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, replace or modify pulse system components	4.1 Repair or replace component parts, using required 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 pulse 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 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 and perform and interpret technical testing.

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 MEA282 Repair or overhaul aircraft pulse 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 MEAAVI0052 Repair and overhaul aircraft pulse 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 pulse system components during scheduled or unscheduled maintenance under routine supervision on four components cumulatively from two or more of the following groups:
 - weather radar, search radar and weapons system radar
 - distance measuring equipment (DME) and tactical aerial navigation (TACAN)
 - doppler navigation
 - air traffic transponder
 - radio altimeter
 - airborne collision avoidance system (ACAS).
- correctly handle components, including anti-static equipment
- perform functional testing or run through test cycles by applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate component faults and assess post-repair or overhaul serviceability
- apply testing and alignment procedures, cleanliness requirements and safety precautions at all times and as relevant to the pulse system components being repaired or overhauled.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component and system operation
- the basic function and operation of components of pulse systems to enable testing for fault isolation or confirmation, to determine repair or overhaul requirements and serviceability status post-repair or overhaul
- basic principles and functions relating to pulse system components and associated with:
 - advanced analogue fundamentals
 - digital fundamentals
 - alternating current and direct current (AC and DC) electrical systems
 - electromagnetic radiation
 - antenna and transmission line (including waveguide) characteristics

- pulsed radar system operation
- work health and safety (WHS) requirements for aircraft pulse system components
- maintenance documentation for aircraft pulse system components
- soldering techniques and their application to pulse 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 pulse 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 pulse 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 pulse 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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