



Australian Government

MEA288 Repair or overhaul aircraft audio and visual systems and reproducers

Release: 2

MEA288 Repair or overhaul aircraft audio and visual systems and reproducers

Modification History

Release 2. Equivalent to MEA288 Repair or overhaul aircraft audio and visual systems and reproducers with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and knowledge of component repair and overhaul procedures relating to aircraft analogue and digital passenger entertainment electronic equipment components 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.

The unit is part of the Avionic Certificate IV (Component Workshop Maintenance Stream) training pathway.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation safety Authority (CASA).

Pre-requisite Unit

MEA261 Use electronic test equipment

MEA296 Use electrical test equipment in aviation maintenance activities

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1. Determine requirements

1.1 Audio and video system and reproducer component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers

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| | 1.2 | Circuitry is correctly prepared and connected to the applicable test equipment and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction |
| | 1.3 | Modification status is clearly established to assist in determining the overhaul requirements for the components |
| | 1.4 | Extent of overhaul or repair is correctly identified and documented |
| 2. Dismantle and inspect audio and video system and reproducer components | 2.1 | Component parts are dismantled in accordance with maintenance manuals while observing all relevant work health and safety (WHS) requirements |
| | 2.2 | Component parts are assessed for serviceability in accordance with the relevant maintenance documentation |
| | 2.3 | Parts requiring specialist repair are tagged and repair instructions are accurately specified |
| | 2.4 | Parts lists are compiled and processed in accordance with standard enterprise procedures |
| 3. Repair and/or modify audio and video system and reproducer | 3.1 | Component parts are repaired or replaced in accordance with the relevant maintenance documentation |
| | 3.2 | Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures |
| 4. Assemble, test and adjust audio and video system and reproducer components | 4.1 | Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents |
| | 4.2 | Assembled components are tested and adjusted in accordance with the applicable maintenance documentation using the appropriate test equipment |
| | 4.3 | Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Audio and video systems and reproducers include:

- Video cassette recorders (VCRs)
- Video display systems
- Cathode ray tube (CRT) display systems
- Symbol generators
- Audio amplifiers
- Audio and video selectors
- Voice recorders
- Microphones
- Head sets
- Passenger control units (PCUs)
- Tape reproducers (and tape reproduction)
- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Procedures and requirements include:

Unit Mapping Information

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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 MEA288 Repair or overhaul aircraft audio and visual systems and reproducers

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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/overhaul procedures and processes relating to analogue and digital circuitry
- recognising the serviceability state and repair or overhaul requirements for digital electronic interface systems:
 - VCRs
 - video display systems
 - CRT display systems
 - symbol generators
 - audio amplifiers
 - audio selectors
 - voice recorders
 - microphones
 - head sets
 - PCUs
 - tape reproducers (and tape reproduction)
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post-repair/overhaul serviceability.

It is essential that component testing procedures, cleanliness requirements and safety precautions applicable to the components being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) is critical.

Evidence of transferability of skills and knowledge related to repair, modification and overhaul is essential. This may be demonstrated through application across a range of components listed in the Assessment Conditions.

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 and system operation
- the basic function and operation of audio and visual and reproducer components to enable testing for fault isolation/confirmation to determine repair or overhaul requirements, and serviceability status post-repair or overhaul
- basic principles/functions relating to audio and visual and reproducer components and associated with:
 - advanced analogue fundamentals
 - basic logic and semiconductor theory
 - digital fundamentals
 - electrostatic discharge (ESD) precautions
 - alternating current (AC) and direct current (DC) electrical systems
 - video display theory
 - video recorder theory
 - cleaning and maintenance techniques for video and recorder heads
 - aircraft display systems
 - symbol generation
 - vector and raster graphics
 - audio circuit theory
 - sound measurement
 - decibel (dB) level standards
 - audio tape control signals and recording techniques
 - basic logic and semiconductor theory
- cleaning and maintenance techniques for audio recorder heads.

Assessment Conditions

- Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that applicable general and special-purpose tools and test equipment would be used where appropriate.
- The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. Use of high precision, high reliability soldering techniques and handling of components, including application of anti-static equipment, must be demonstrated.
- 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 an item from each of the following groups:
 - VCRs
 - video display systems
 - CRT display systems
 - symbol generators
 - audio amplifiers
 - audio and video selectors
 - voice recorders
 - microphones
 - head sets
 - PCUs
 - tape reproducers (and tape reproduction).
- 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

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