



Australian Government

Department of Education, Employment and Workplace Relations

MEA288A Repair or overhaul aircraft audio and visual systems and reproducers

Revision Number: 2

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Modification History

Minor formatting and editorial changes made. Minor clarification made in the unit descriptor.

Unit Descriptor

This unit of competency is part of the Avionic Certificate IV (Component Workshop Maintenance Stream) training pathway. It covers the competencies required to repair or overhaul in-flight passenger entertainment audio and video systems and reproducers. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Application of the Unit

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

Applications include fixed and rotary wing aircraft components repaired or overhauled in aviation maintenance workshops.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
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Elements and Performance Criteria

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| <p>1. Determine requirements</p> | <p>1.1. <i>Audio and video system and reproducer</i> component defect reports (removed in order) are correctly interpreted and matched by part and serial numbers</p> <p>1.2. Circuitry is correctly prepared and connected to the applicable test equipment, functionally tested or cycled through the prescribed test procedures in accordance with maintenance documentation for evidence of serviceability or malfunction</p> <p>1.3. Modification status is clearly established to assist in determining the overhaul status for the components</p> <p>1.4. Extent of overhaul or repair is correctly identified and documented</p> |
| <p>2. Dismantle and inspect audio and video system and reproducer components</p> | <p>2.1. Component parts are dismantled in accordance with maintenance manuals</p> <p>2.2. Component parts are assessed for serviceability in accordance with the relevant documentation</p> <p>2.3. Parts requiring specialist repair are tagged and repair instructions are accurately recorded</p> <p>2.4. Parts lists are compiled and processed in accordance with standard enterprise procedures</p> |
| <p>3. Repair and/or modify audio and video system and reproducer components</p> | <p>3.1. Component parts are repaired or replaced in accordance with the relevant maintenance documentation</p> <p>3.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures</p> |
| <p>4. Assemble, test and adjust audio and video system and reproducer components</p> | <p>4.1. Assembly of component parts is carried out in accordance with specified to applicable maintenance documents</p> <p>4.2. Assembled components are tested and adjusted in accordance with the applicable documentation using the appropriate test equipment</p> <p>4.3. Required maintenance documentation and modification records are completed in accordance with standard enterprise procedures</p> |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS 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

Required knowledge

Look for evidence that confirms knowledge of:

- component and system operation
- explaining 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
- explaining basic principles/functions relating to audio and visual and reproducer components and associated with:
 - advanced analogue fundamentals
 - basic logic and semiconductor theory
 - digital fundamentals
 - ESD precautions
 - AC and 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
- dB level standards
- audio tape control signals and recording techniques
- basic logic and semiconductor theory
- cleaning and maintenance techniques for audio recorder heads

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to repair and overhaul audio and video system and tape reproducer components in accordance with maintenance manuals and regulatory/industry procedures while observing all relevant safety precautions.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with audio and video system and tape reproducer components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice 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 of the systems listed in the Range Statement. 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.</p> <p>A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on an item from each of Groups 1 to 11, as listed in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.</p>
<p>Context of and specific resources for</p>	<p>Competency should be assessed in the work</p>

assessment	environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general and special purpose tools and test equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Audio and video systems and reproducers	<p>Audio and video systems and reproducers may include:</p> <ol style="list-style-type: none"> 1. VCRs 2. Video display systems 3. CRT display systems 4. Symbol generators 5. Audio amplifiers 6. Audio and video selectors 7. Voice recorders 8. Microphones 9. Head sets 10. PCUs 11. Tape reproducers (and tape reproduction)
Application	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Aviation maintenance

Competency field

Co-requisite units

MEA260B Use electrical test equipment

MEA261C Use electronic test equipment