



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEA288A Repair or overhaul aircraft audio and visual systems and reproducers**

**Revision Number: 1**

# MEA288A Repair or overhaul aircraft audio and visual systems and reproducers

## Modification History

Not applicable.

## Unit Descriptor

<b>Unit descriptor</b>	This unit of competency is part of the MEA40610 Certificate IV in Aeroskills (Avionics) workshop training pathway. It covers the competencies required to repair or overhaul in-flight passenger entertainment audio and video systems and reproducers.
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## Application of the Unit

<b>Application of the unit</b>	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.
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## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	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.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine requirements	<p>1.1. <i>Audio and video system and reproducer</i> component defect reports (removal tags) or customer 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 and is functionally tested or cycled through the prescribed test procedures in accordance with the maintenance documentation for evidence of serviceability or malfunction</p> <p>1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components</p> <p>1.4. Extent of overhaul or repair is correctly identified and documented</p>
2. Dismantle and inspect audio and video system and reproducer components	<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 maintenance documentation</p> <p>2.3. Parts requiring specialist repair are tagged and repair instructions are accurately specified</p> <p>2.4. Parts lists are compiled and processed in accordance with standard enterprise procedures</p>
3. Repair and/or modify audio and video system and reproducer components	<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>
4. Assemble, test and adjust audio and video system and reproducer components	<p>4.1. Assembly of component parts is carried out in accordance with specified tolerances and the applicable maintenance documents</p> <p>4.2. Assembled components are tested and adjusted in accordance with the applicable maintenance documentation using the appropriate test equipment</p> <p>4.3. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

Look for evidence that confirms skills in:

- applying relevant occupational health and safety (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
  - cathode ray tube (CRT) display systems
  - symbol generators
  - audio amplifiers
  - audio selectors
  - voice recorders
  - microphones
  - head sets
  - passenger control units (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
  - electro-static discharge (ESD) precautions

**REQUIRED SKILLS AND KNOWLEDGE**

- 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
- decibel (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

### 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.

#### Overview of assessment

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.

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

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 .

<b>EVIDENCE GUIDE</b>	
<b>Context of and specific resources for assessment</b>	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 general and special purpose tools and test equipment would be used where appropriate.
<b>Method of assessment</b>	
<b>Guidance information for assessment</b>	



## Range Statement

<b>RANGE STATEMENT</b>	
<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>	
<b>Note</b>	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
<b>Audio and video systems and reproducers</b>	<p>Audio and video systems and reproducers may include:</p> <ol style="list-style-type: none"> <li>1. VCRs</li> <li>2. Video display systems</li> <li>3. CRT display systems</li> <li>4. Symbol generators</li> <li>5. Audio amplifiers</li> <li>6. Audio and video selectors</li> <li>7. Voice recorders</li> <li>8. Microphones</li> <li>9. Head sets</li> <li>10. PCUs</li> <li>11. Tape reproducers (and tape reproduction)</li> </ol>
<b>Application</b>	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> <li>• scheduled or unscheduled maintenance</li> <li>• individual or team-related activities</li> <li>• complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level</li> </ul>
<b>Procedures and requirements</b>	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

## Unit Sector(s)

<b>Unit sector</b>	Component repair and overhaul
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## Competency field

<b>Competency field</b>	Aviation maintenance
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## Co-requisite units

<b>Co-requisite units</b>		
	MEA260B	Use electrical test equipment
	MEA261C	Use electronic test equipment