



Australian Government

Department of Education, Employment and Workplace Relations

MEA510A Maintain seat and pod electrical and electronic systems

Revision Number: 2

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Modification History

Minor formatting and editorial changes made. Missing knowledge requirements reinstated.

Unit Descriptor

This unit of competency is part of the Aircraft Life Support and Furnishing Certificate III and IV training pathways. It covers the competencies required for the removal, installation and limited maintenance of seat and pod electrical and electronic systems during the overhaul of seats and pods. 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 in the removal and installation of electrical and electronic system components during the overhaul of aircraft seats and pods, and the use of basic electrical test equipment and in-flight entertainment system test sets to confirm system serviceability.

Applications include electrical and electronic system components fitted to seats and pods undergoing overhaul in workshops

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable

Employability Skills Information

This unit contains employability skills.

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.

Elements and Performance Criteria

1. Remove and inspect seat and pod electrical system components
 - 1.1. System is rendered safe and prepared in accordance with the applicable maintenance manual to ensure personnel safety
 - 1.2. **Removal of electrical system components** is carried out in accordance with the applicable maintenance manual
 - 1.3. Removed components are inspected for **visible signs of damage or deterioration** in accordance with maintenance manuals and standard enterprise procedures
 - 1.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
 - 1.5. Removed components are tagged, packaged or discarded in accordance with specified procedures
2. Remove and inspect seat and pod electronic system components
 - 2.1. System is rendered safe and prepared in accordance with the applicable maintenance manual to ensure personnel safety
 - 2.2. Removal of **electronic system components** is carried out in accordance with the applicable maintenance manual
 - 2.3. Removed components are inspected for **visible signs of damage or deterioration** in accordance with maintenance manuals and standard enterprise procedures
 - 2.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
 - 2.5. Removed components are tagged, packaged or discarded in accordance with specified procedures
3. Install seat and pod electrical system components
 - 3.1. Electrical system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life
 - 3.2. Physical installation of electrical components is carried out in accordance with the applicable maintenance manual
 - 3.3. System is reinstated to correct physical condition in preparation for testing
 - 3.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
4. Install seat and pod electronic system
 - 4.1. Electronic system components to be installed are checked to confirm correct part numbers, modification

- components
- status, serviceability and shelf life
- 4.2. Physical installation of electronic components is carried out in accordance with the applicable maintenance manual
 - 4.3. System is reinstated to correct physical condition in preparation for testing
 - 4.4. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Functionally test seat and pod electrical and electronic systems
- 5.1. Applicable system test set is connected to seat or pod in accordance with the applicable maintenance manual or approved vendor procedures
 - 5.2. Power is applied to the seat or pod in accordance with applicable maintenance manual
 - 5.3. Seat or pod electrical system is functionally tested for correct operation in accordance with the applicable maintenance manual
 - 5.4. Seat or pod electronic system is functionally tested using the applicable test set in accordance with the applicable maintenance manual
 - 5.5. Test equipment is removed and required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS practices, including the use of MSDS and PPE
- using approved maintenance documentation and aircraft publications relating to aircraft seat and pod electrical and electronic systems and components
- recognising defects in and deterioration of electrical cables to aircraft industry standards, including crimped and soldered joints
- correctly interpreting aircraft wire markings, terminal block identification and plug/socket pin numbering systems
- inspecting electrical looms and harness pre- and post-removal and installation to ensure minimum bends are maintained, cable is not in tension, plugs are correctly aligned, security of route ensures no chaffing of insulation, adequate clipping and cable ties have been utilised and construction complies with aircraft industry standards
- positively identifying seat and pod electrical and electronic system components
- plug connector pin removal and insertion, where soldering is not required
- recognising damage and visual defects in electrical components, such as actuators, motors and switches
- recognising damage and visual defects in electronic system components, such as display screens, tuners, volume controls, audio headset receptacles and data cables

Required knowledge

Look for evidence that confirms knowledge of:

- relevant OHS procedures
- how to obtain relevant MSDS
- the use of applicable items of PPE
- component attachment methods
- connection of hardware and plugs
- electrical wiring used in aircraft and wire marking
- plug/socket pin numbering and terminal block identification
- cable and loom installation requirements, including bonding and screening
- crimping tools and crimp terminals
- procedures for removal and insertion of plug connector pins, where soldering is not required
- handling and maintenance precautions relating to electronic displays and electrostatic sensitive devices
- electromagnetic environment
- data cable installation requirements

Evidence Guide

<p>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>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to apply hand skills, use specialist tools and use maintenance publications to remove and install seat and pod electrical and electronic system components, and to functionally test the systems while observing all relevant safety precautions.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>It is essential that applicable cleanliness requirements and OHS safety precautions are fully observed, including awareness of electrostatic discharge procedures.</p> <p>Evidence of transferability of skills and knowledge related to removal and installation is essential. An understanding of the attachment methods, connection of hardware and system operation as they relate to the work must be demonstrated before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.</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 on the range of components and tasks 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 assessment</p>	<p>Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.</p>
<p>Method of assessment</p>	
<p>Guidance information for assessment</p>	

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>	
<p>Removal and installation of electrical components</p>	<p>Removal and installation of electrical components involves one or more of the following connection methods:</p> <ul style="list-style-type: none"> • bolted • plug connectors
<p>Electrical system components</p>	<p>Electrical system components may include:</p> <ul style="list-style-type: none"> • electrical cables and looms • selectors and switches • motors and actuators • relays, control units and modules
<p>Electronic system components</p>	<p>Electronic system components may include:</p> <ul style="list-style-type: none"> • display units • tuners/selectors • volume controls • audio headset receptacles • data cables
<p>Visible signs of damage or deterioration</p>	<p>Visible signs of damage or deterioration may include:</p> <ul style="list-style-type: none"> • broken or chafed wires • corrosion of plugs and connectors • physical damage to components • wear • evidence of electrical or electronic component overheating
<p>Application</p>	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> • scheduled or unscheduled removal and installation of seat and pod electrical and electronic systems and components, and to system functional testing during seat and pod overhaul in workshops

Unit Sector(s)

Aviation maintenance

Competency field

Co-requisite units

MEA240B Use electrical test equipment to perform basic electrical tests