



Australian Government

MEA293 Remove and install aircraft electronic system components

Release: 1

MEA293 Remove and install aircraft electronic system components

Modification History

Release 1. Equivalent to MEA207 Remove and install aircraft electronic system components. Revised as a result of changed prerequisites. Unit codes updated.

Application

This unit of competency describes the skills and knowledge required to remove and install aircraft electronic system components. It involves the application of hand skills and the use of maintenance documentation and publications when removing and installing the system components and line replaceable units (LRUs) of aircraft fitted with electronic systems. Work may be performed individually or as part of a team.

The unit applies to work on fixed and rotary wing aircraft during scheduled and unscheduled maintenance. It is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

This unit forms part of the CASA requirement for maintenance certification licences under Civil Aviation Safety Regulation (CASR) Part 66. Where a CASA licensing outcome is sought, users must refer to the licensing provisions in the MEA Aeroskills Companion Volume Implementation Guide.

Pre-requisite Unit

Nil.

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. Remove aircraft electronic system components	1.1 Render system safe and prepared according to applicable maintenance manual 1.2 Fit isolation tags, where necessary, to ensure personnel safety 1.3 Remove electronic system component according to applicable maintenance and work health and safety (WHS)

ELEMENTS	PERFORMANCE CRITERIA
	requirements
	1.4 Complete required maintenance documentation and process according to standard organisational procedures
	1.5 Tag and package removed components according to specified procedures
2. Install aircraft electronic system components	2.1 Check electronic system components to be installed to confirm correct part numbers, modification status, serviceability, and shelf life
	2.2 Perform physical installation of electronic components according to maintenance manual and regulatory requirements, and carry out required adjustment and alignment
	2.3 Conduct required processes to reinstate system in order to correct operational condition in preparation for testing
3. Finalise removal and installation documentation	3.1 Complete required maintenance documentation
	3.2 Process maintenance documentation according to organisational procedures

Foundation Skills

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

Unit Mapping Information

Release 1. Equivalent to MEA207 Remove and install aircraft electronic 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 MEA293 Remove and install aircraft electronic system components

Modification History

Release 1. Equivalent to MEA207 Remove and install aircraft electronic system components. Revised as a result of changed prerequisites. Unit codes updated.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, which must include the ability to demonstrate to the satisfaction of the workplace assessor that the elements and performance criteria are being achieved under routine supervision on sufficient components/line replaceable units (LRUs) to establish competency on at least five of the following systems or components:

- instrument navigation systems
- communication systems
- radio navigation systems
- pulse operated systems
- antennas
- electronic instrument displays, which may be omitted where not applicable to the organisation
- automatic flight control systems, which may be omitted where not applicable to the organisation
- cabin entertainment equipment, which may be omitted where not applicable to the organisation
- on-board maintenance systems, which may be omitted where not applicable to the organisation.

In the course of the above work, the candidate must:

- prepare for work in line with safety and quality requirements and according to industry, regulatory and organisational requirements, procedures and methods
- locate and identify electronic navigational system components, including:
 - altitude reporting systems (transponder, encoder and control unit)
 - remote attitude displays
 - inertial navigation and reference systems
- locate and identify:
 - multi-function electronic displays, including electronic flight instrument system (EFIS), engine indicating and crew alerting system (EICAS), electronic central aircraft monitor system (ECAM), flight management computer system (FMCS) and head-up display (HUD)

- radio communication and navigation system components comprising ultra-high frequency (UHF); satellite communications (SATCOM); distance measuring equipment (DME); instrument landing system (ILS); global navigation system (GNS); radio navigation; traffic collision avoidance system (TCAS); radio altimeter (RADALT); and radio system antennas, including half dipole, slotted, loop and Marconi
- primary and secondary radar system components, including transmission lines, waveguides, and antennas
- cockpit voice recorder system components, internal communications and passenger/cockpit audio/visual components
- apply required work health and safety (WHS) practices
- complete and process maintenance documentation
- comply with cleanliness requirements and safety precautions applicable to system being maintained, as well as with work practices associated with electrostatic sensitive devices.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- industry standard procedures specified by manufacturers, regulatory authorities, and the organisation relating to the work described in the performance evidence
- electronic system components, including panel and rack mounted electronic system components and LRUs of:
 - instrument navigation systems
 - communication systems
 - radio navigation systems
 - pulse operated systems
 - antennas
 - electronic instrument displays, where applicable to the organisation
 - automatic flight control systems, where applicable to the organisation
 - cabin entertainment equipment, where applicable to the organisation
 - on-board maintenance systems, where applicable to the organisation
- maintenance manual requirements relating to:
 - performing physical installation of electronic system components
 - rendering system safe for removal
 - removing electronic system components
 - adjusting and aligning electronic components
- industry, regulatory and organisational requirements, procedures and methods relating to the work described in the performance evidence, including:
 - WHS processes and practices, including handling and maintenance precautions relating to gyroscopes, gimbals, electronic displays, airborne radar systems (including pressurised waveguides), electrostatic sensitive devices, and radio installations
 - completing and processing required maintenance documentation

- tagging and packaging removed components
- attaching components, including attachment methods
- connecting components and plugs
- adjusting and aligning system components
- observing handling and maintenance precautions
- using approved maintenance documentation and aircraft publications relating to avionics systems and the components being maintained
- key features of panel and rack mounting systems for electronic system components and LRUs
- electromagnetic environment.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (Australian Defence Force [ADF] and Civil Aviation Safety Authority [CASA]) and maintenance stakeholders, and must be rigorously observed.

Competency must be assessed in the workplace or a simulated workplace, using tools and equipment specified in maintenance manuals. Where assessment occurs in a simulated workplace, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations encountered during the removal and installation of aircraft electronic system components. It is also expected that general-purpose tools, test and ground support equipment found in most routine situations would be used as appropriate to the evidence requirements specified above.

The candidate must be permitted to refer to relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals, and reference materials.

Candidate capability of providing the required performance and knowledge evidence must 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).

Candidates being assessed who have already attained MEA206 *Remove and install aircraft basic radio communication and navigation system components* will have covered a significant amount of the skill and knowledge requirements for this unit plus part of the performance criteria for Elements 1, 2 and 3. The Log of Industrial Experience and Achievement records relating to MEA206 *Remove and install aircraft basic radio communication and navigation system components* may be accepted as also meeting the evidence requirements for this unit in the applicable areas.

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Where the unit is to be used for CASA licensing purposes the assessor must also meet the criteria specified in the Civil Aviation Safety Regulation (CASR) Part 147 Manual of Standards.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>