Australian Government
Department of Education, Employment and Workplace Relations

MEA226C Inspect aircraft electronic systems and components

Revision Number: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

MEA226C Inspect aircraft electronic systems and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Avionic AME Certificate IV training pathways. It covers the competencies required to inspect electronic systems and components of fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the B2 Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of system/component knowledge and applicable maintenance publications to inspect aircraft electronic systems and components. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA246C	Fabricate and/or repair aircraft electrical components or parts

Employability Skills Information

Employability skills	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

ELEMENT	PERFORMANCE CRITERIA
1. Inspect electronic systems and components.	1.1. Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual. 1.2. ***Electronic system components*** are visually or physically checked for external signs of defects in accordance with applicable maintenance manual. 1.3. Defects are correctly identified and recorded in accordance with standard enterprise procedures.

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:

- Application of relevant occupational health and safety (OHS) practices
- The use of approved maintenance documentation and aircraft publications relating to the avionic system being maintained
- Recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in:
  - multi-function display systems (interface units, display generators, display units), i.e. head-up display systems (HUD), engine indicating and crew alerting systems (EICAS), flight management systems (FMS), ACARS, electronic flight instrument systems (EFIS), electronic centralised aircraft monitor systems (ECAM)
  - integrated modular avionics
  - inertial navigation systems (INS), inertial reference systems (IRS)
  - external communications systems - high frequency (HF), ultra high frequency (UHF), very high frequency (VHF), satellite communication (SATCOM), emergency location transmitter (ELT)
  - internal communications systems - intercommunication, cockpit voice recorders (CVR), cockpit/cabin audio visual, data systems, cabin network services)
  - information systems such as air traffic and information management systems and network server systems
  - radio frequency navigation systems - instrument landing system (ILS), very high frequency omni-range (VOR), automatic direction finding (ADF), global navigation system (GNS)
  - primary radar (navigation/weather) components and interface
  - aircraft collision avoidance (ACAS) components and interface
  - radio altimeter components and interface
  - distance measuring equipment (DME) components and interface
  - ATC Transponders

Required knowledge

Look for evidence that confirms knowledge of:

- Component attachment methods and connection of hardware
- The basic layout (block diagram level) and operation of:
  - multi-function display systems (interface units, display generators, display

REQUIRED SKILLS AND KNOWLEDGE
units), i.e. HUD, ICAS, FMS, ACARS, EFIS, ECAM • integrated modular avionics • INS, IRS • external communications systems - HF, UHF, VHF, SATCOM, ELT • internal communications systems - intercommunication, Cockpit Voice Recorders, cockpit/cabin audio visual, data systems, cabin network services • information systems such as air traffic and information management systems and network server systems • radio frequency navigation systems - ILS, VOR, ADF, GNS • primary radar (navigation/weather) components and interface • ACAS components and interface • radio altimeter components and interface • DME components and interface • ATC Transponders.

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 inspect aircraft electronic systems and components 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 inspection applications (including the timely involvement of supervisors or other trades) associated with aircraft electronic systems and components. It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Evidence of transferability of skills and knowledge related to inspection is essential. This is to be demonstrated through application across a range of electronic systems and components listed in the Range Statement. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. 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 each type of system listed in Groups 1 to 7 in the Range Statement and at least one component for each listed system type (Groups 6 and 7 may be omitted where they are not applicable to the enterprise). This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .
Context of and specific resources for assessment	Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that general and special purpose tools, test and ground support equipment would be used where appropriate.

EVIDENCE GUIDE	
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
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.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.
Electronic systems and components	*Electronic systems and components include*: 1. Electronic instrument displays - electronic flight instrument systems (EFIS), engine indicating and crew alerting systems (EICAS), flight management systems (FMS), electronic centralised aircraft monitor systems (ECAM), and head-up display systems (HUD) (where applicable to enterprise) 2. Instrument navigation systems - inertial navigation systems (INS), inertial reference systems (IRS), compasses and attitude and heading reference systems (AHRS) 3. Communication systems - high frequency (HF), very high frequency (VHF), ultra high frequency (UHF), satellite communication (SATCOM), intercom, data and cabin network services, emergency location transmitter (ELT) and cockpit voice recorder (CVR) 4. Radio navigation systems - automatic direction finding (ADF), very high frequency omni-range (VOR), instrument landing system (ILS), and global navigation system (GNS) 5. Pulse operated systems - weather radar, navigation radar, ATC transponder, radio altimeter (RADALT), distance measuring equipment (DME), doppler and aircraft collision avoidance system (ACAS) (where applicable to enterprise) 6. Integrated modular avionics (where applicable to enterprise)

RANGE STATEMENT	
	7. Information systems - air traffic and information management, network servers (where applicable to enterprise)
Application	Application of this unit may relate to: • Scheduled or unscheduled maintenance activities • Individual or team related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		
	MEA207C	Remove and install aircraft electronic system components