



Australian Government

Assessment Requirements for MEA221

Inspect, test and troubleshoot aircraft secondary radar systems and components

Release: 2

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Modification History

Release 2. Equivalent to MEA221 Inspect, test and troubleshoot aircraft secondary radar systems and components with amended prerequisite codes.

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS practices
- using approved maintenance documentation and aircraft publications relating to the pulse system being maintained
- recognition of system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses/transmission lines) and security in:
 - DME components and interface
 - radio altimeters
 - ATC transponders
 - doppler navigation system
 - ACAS
 - ADS-B
- applying logic processes, taking and interpreting system measurements to accurately and effectively isolate malfunctions within the systems
- testing systems to isolate system malfunctions and assess post-maintenance serviceability.

It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the electrical system being maintained are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) is critical.

Evidence of transferability of skills and knowledge related to inspection, testing and troubleshooting is essential. This is to be demonstrated through application across secondary radar systems and components listed in the Assessment Conditions.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- component attachment methods
- the basic layout (block diagram level), function and operation of:

- DME, including components and interface
- radio altimeters
- ATC transponders
- doppler navigation system
- ACAS
- ADS-B
- basic principles/functions, relating to the listed systems and associated with:
 - basic alternating current (AC) and direct current (DC) circuit theory
 - digital fundamentals
 - analogue fundamentals
 - radar fundamentals
 - transmission lines, waveguide and antenna characteristics
- pulse system maintenance requirements and troubleshooting procedures
- relevant WHS practices
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures.

Assessment Conditions

- Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is also expected that applicable general and special purpose tools, and test and ground support equipment would be used where appropriate.
- The application of testing procedures should clearly indicate knowledge of system operation, the relationship of individual components and the links with other systems (if applicable) within the limits of the aircraft/system fault finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on at least one (1) of the following secondary radar systems and its major system components/line replaceable units (LRU):
 - ATC transponder
 - radio altimeter
 - DME
 - doppler navigation system
 - ACAS
 - ADS-B.

- This shall 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).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.
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Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>