



Australian Government

Assessment Requirements for MEA279 Inspect, test and troubleshoot full authority digital engine control systems

Release: 2

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Modification History

Release 2. Equivalent to MEA279 Inspect, test and troubleshoot full authority digital engine control systems 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, including those relating to engine ground running
- using approved maintenance documentation and aircraft publications relating to the applicable FADEC system
- using test sets to download maintenance data from the FADEC system and interpreting the data
- identifying/locating airframe and engine, including propeller/rotor-mounted FADEC system components
- recognising system and component defects/external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling/harnesses) and security in airframe and engine-mounted FADEC system components
- correctly handling electrostatic sensitive devices
- applying logic processes, using test equipment and appropriate wiring diagrams and manuals to isolate FADEC system malfunctions
- using built-in test features to confirm post-maintenance serviceability.

It is essential that system testing procedures, cleanliness requirements and safety precautions applicable to the FADEC 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 and component removal and installation is essential. This is to be demonstrated through application on FADEC systems and components as defined in the Range of 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
- connection of hardware and plugs

- digital electronic theory
- open and closed loop control
- the basic layout (block diagram level), function and operation of FADEC systems
- architecture of FADEC system computers, software and software management
- operation of sensors that input data to FADEC system computers
- built-in test system operation and downloading and interpretation of system data
- relevant regulatory requirements and standard procedures, including software management control
- maintenance requirements and troubleshooting procedures
- relevant maintenance manuals.

Assessment Conditions

- 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-purpose tools and test equipment found in most routine situations 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 FADEC systems and system components as follows:
 - computers, sensors, interfaces, cockpit controls, data cables and wiring looms that comprise the electronic control system
- Other engine-mounted related components, such as spark plugs, ignition units, injectors and fuel control units are covered by the applicable engine maintenance units (e.g. MEA313 Inspect, test and troubleshoot piston engine systems and components, MEA314 Inspect, test and troubleshoot gas turbine engine systems and components or MEA353 Maintain basic light aircraft engines and propellers) and should not be assessed as part of this unit.
- 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.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>