



Australian Government

**Assessment Requirements for
MEAAVI0010 Inspect, test and
troubleshoot advanced aircraft instrument
systems and components**

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Modification History

Release 1. Application changed. Elements and Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA213 Inspect, test and troubleshoot advanced aircraft instrument systems and components.

Performance Evidence

There must be evidence the candidate has completed all the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- perform inspection, testing and troubleshooting on advanced aircraft instrument systems and components on a system and at least one major system component or line replacement unit (LRU) from each of the following:
 - pitot/static system components; airspeed indicators (ASIs); vertical speed indicators (VSIs); air data systems and components; machmeters; altimeters, including servo and encoding altimeters; angle of attack and stall warning/avoidance systems
 - turn and slip indicators, directional gyros (DGs), artificial horizons (AHs), attitude and heading reference systems (AHRS) and components, remote reading gyro compass systems and components, and direct reading compasses
 - turbine engine indication systems and components (tachometers, pressure, temperature, engine performance and engine vibration)
 - transmitter/indicator measuring instrument systems (pressure, temperature and position)
 - fuel quantity indication and flow systems and components
 - ground proximity warning system (GPWS) where relevant to the enterprise
 - flight data recorders (FDRs) where relevant to the enterprise
- recognise system and component defects, external damage, correct/incorrect installation, connection of plugs, terminations, attachment hardware (including cabling/harnesses) and security in each of:
 - flight instruments
 - pitot/static systems
 - navigation systems – compasses and AHRS
 - GPWS (where applicable to the enterprise)
 - FDRs (where applicable to the enterprise)
 - position indicators, engine/auxiliary system indication systems and system components

- perform functional testing by applying logic processes, taking and interpreting system measurements, and using test equipment and appropriate wiring diagrams and manuals to isolate instrument and display system malfunctions and faults in the listed systems and assess post-maintenance serviceability
- apply testing procedures, cleanliness requirements and safety precautions at all times, and as relevant to the system/s being maintained.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component attachment methods
- connection of hardware
- instrument system maintenance requirements and testing and troubleshooting procedures
- the basic layout (block diagram level), function and operation of:
 - flight instruments, including:
 - ASIs
 - VSIs
 - air data systems and components
 - machmeters
 - altimeters including servo and encoding altimeters
 - turn and slip indicators
 - AHs
 - DGs
 - angle of attack and stall warning/avoidance systems
 - pitot/static systems
 - navigation systems:
 - direct reading compasses
 - gyro compasses
 - AHRS
 - GPWS
 - turbine engine instruments, including:
 - temperature and pressure, including thermocouples, sensors and transmitters
 - speed, including mechanical and electric tachometers
 - thrust, including fan, propeller and jet
 - torque
 - fuel flow
 - vibration
 - auxiliary transmitter/indicator measuring systems, including:
 - hydraulic pressure and temperature
 - pneumatic pressure
 - transmission oil pressure and temperature

- fuel remaining/used
- fuel quantity indication
- component position (e.g. doors, flaps, speed brakes and landing gear)
- FDR systems
- the operating principles of the above-listed systems and associated with:
 - atmospheric conditions; properties and effects on aircraft instruments and systems
 - pressure and temperature sensing elements and their use in aircraft instruments
 - gyroscopes and their use in aircraft instrument and reference systems
- the various methods of navigation, and describing how they are used by both aircraft conventional and electronic navigational instruments and systems
- work health and safety (WHS) practices for advanced aircraft instrument systems and components
- maintenance manuals for the inspection, testing and troubleshooting of advanced aircraft instrument systems and components
- relevant regulatory requirements and standard procedures.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (DASA and CASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in inspecting, testing and troubleshooting advanced aircraft instrument systems and components. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to inspecting, testing and troubleshooting advanced aircraft instrument systems and components
 - tools and equipment specified in the maintenance manuals
 - general- and special-purpose tools and items of ground support and test equipment.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience and achievement.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -

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