



Australian Government

MEAAVI0030 Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components

Release: 1

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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 MEA233 Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components.

Application

This unit describes the skills and knowledge required to apply hand skills and use system and component knowledge, maintenance publications and test equipment to inspect, test and troubleshoot inertial navigation and reference systems and components of fixed and rotary wing aircraft during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEA246 Fabricate and/or repair aircraft electrical hardware or parts

MEA293 Remove and install aircraft electronic system components

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. Inspect inertial navigation and reference systems and components	1.1 Identify specific inspection requirements to determine unserviceability using maintenance documentation and modification status, including relevant system defect reports 1.2 Check isolation tags and configure aircraft for safe system inspection and operation in accordance with maintenance

	manual 1.3 Visually or physically check inertial navigation and reference system components for external signs of defects in accordance with maintenance manual while observing all relevant work health and safety (WHS) requirements 1.4 Identify and report defects in accordance with standard enterprise procedures
2. Test or adjust inertial navigation and reference systems and components	2.1 Prepare aircraft and system for application of power or system operation in accordance with maintenance manual 2.2 Perform functional testing of inertial navigation and reference system for evidence of serviceability or malfunction in accordance with maintenance manual 2.3 Perform required calibration or adjustments to system in accordance with maintenance manual
3. Troubleshoot inertial navigation and reference systems	3.1 Use available information from maintenance documentation, inspection and test results to assist in fault determination 3.2 Troubleshoot issues to line replacement level using maintenance manual fault diagnosis guides and logic processes 3.3 Obtain required specialist or supervisory advice to assist with the troubleshooting process 3.4 Locate inertial navigation and reference system faults and identify and record causes of faults in required maintenance documentation 3.5 Determine requirements for rectification of faults

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance manuals, inspection procedures and specifications (allowable limits).
- Writing skills to record and report on defects and faults and their causes.
- Numeracy skills to interpret and communicate technical information and take and interpret system measurements.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA233 Inspect, test and troubleshoot aircraft inertial navigation and reference systems and 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 MEAAVI0030 Inspect, test and troubleshoot aircraft inertial navigation and reference systems and components

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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 aircraft inertial navigation and reference systems and components on an inertial navigation system and at least one major system component or line replacement unit (LRU)
- recognise the following for the system being worked on:
 - system and component defects or external damage
 - correct installation
 - connection of plugs
 - terminations
 - attached hardware (including cabling/harnesses)
 - security in inertial navigation and reference system components
- perform functional testing in the system being maintained by applying logic processes, taking and interpreting system measurements and using test equipment, appropriate wiring diagrams and manuals to isolate system malfunctions and assess post-maintenance serviceability
- apply testing procedures, cleanliness requirements and safety precautions at all times, and as relevant to the system being maintained.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component attachment methods
- connection of hardware
- the basic layout (block diagram level), function and operation of inertial navigation and reference systems
- the operating principles of inertial navigation and reference systems including:
 - terminology
 - fundamental principles of inertial navigation

- two degree of freedom systems
- semi-analytical systems
- strapdown systems
- ring laser gyroscopes
- the various methods of navigation and how they are used by both aircraft conventional and electronic navigational instruments and systems
- maintenance requirements and troubleshooting procedures for the systems being maintained
- work health and safety (WHS) practices for maintenance tasks relating to aircraft inertial navigation and reference systems and components
- maintenance manuals for maintenance tasks relating to for aircraft inertial navigation and reference systems and components
- relevant regulatory requirements and standard procedures for the systems being maintained.

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 aircraft inertial navigation and reference 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 aircraft inertial navigation and reference systems and components
 - tools and equipment specified in the maintenance manuals
 - general and special-purpose tools and 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.

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