



Australian Government

MEAAVI0004 Remove and install basic aircraft instrument system 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 MEA204 Remove and install basic aircraft instrument system components.

Application

This unit describes the skills and knowledge required to apply hand skills and use maintenance documentation and publications to remove and install basic aircraft instrument system components during scheduled or unscheduled maintenance of fixed and rotary wing aircraft that have basic instrument systems. 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

MEA201 Remove and install miscellaneous aircraft electrical hardware/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. Remove basic aircraft instrument system components	1.1 Render system safe and prepare it in accordance with maintenance manual, fitting required isolation tags to ensure personnel safety 1.2 Remove instrument components in accordance with maintenance manual while observing all relevant work health and safety (WHS) requirements 1.3 Complete and process required maintenance documentation relating to removal in accordance with standard enterprise

Elements	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	procedures 1.4 Tag and pack removed components in accordance with industry, enterprise and manufacturer procedures
2. Install basic aircraft instrument system components	2.1 Confirm correct part numbers, modification status, serviceability and shelf life of electrical components to be installed against maintenance manual 2.2 Perform physical installation of instrument components in accordance with the applicable maintenance manual and regulatory requirements, and ensure appropriate adjustment or alignment is carried out 2.3 Reinstate system to operational condition in preparation for testing, as necessary and in accordance with maintenance manual 2.4 Complete and process required maintenance documentation relating to installation in accordance with standard enterprise procedures

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.
- Writing skills to complete maintenance documentation.
- Numeracy skills to interpret technical information.

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 MEA204 Remove and install basic aircraft instrument system 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 MEAAVI0004 Remove and install basic aircraft instrument system 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:

- remove and install basic aircraft instrument system components during scheduled or unscheduled maintenance activity to meet requirements on at least one component from each of the following:
 - pitot/static system components, airspeed indicators (ASIs), vertical speed indicators (VSIs) and counter pointer altimeters
 - directional gyros (DGs) and artificial horizons (AHs), both air and electrically driven
 - turn and bank and slip/turn coordinators
 - remote reading gyro compass system (may be omitted if not relevant to the enterprise)
 - direct reading compasses
 - piston engine indication system components (direct reading measuring instruments and temperature indication)
 - gas turbine engine indication system components (may be omitted if not relevant to the enterprise)
 - electrical systems indication (voltage, current, power and frequency)
 - basic fuel quantity indication system components
 - pneumatic/vacuum indication system components
- identify and locate the following during the above maintenance activity:
 - piston engine system temperature, pressure, speed (including mechanical and electrical tachometers), manifold pressure/boost (including aneroid type, sylphon bellows and dual compartment type)
 - gas turbine engine indicating system temperature, pressure, speed, torque, fuel flow and vibration (may be omitted if not relevant to the enterprise)
 - auxiliary direct reading systems, including hydraulic pressure, pneumatic pressure and vacuum, and fuel storage quantities
 - flight systems, including attitude, altitude, air speed and outside air temperature (OAT)
 - direct reading compasses
 - remote reading gyro compass system components (may be omitted if not relevant to enterprise)

- correctly handle and observe maintenance precautions relating to gyroscopes, gimbals, and pitot/static systems (connections, heating and protrusions) during maintenance activity
- provide evidence of transferability of skills and knowledge related to removal and installation through application across the specified range of basic aircraft instrument system components from the above maintenance activity
- apply cleanliness requirements and safety precautions at all times, and as relevant to the systems being maintained, and follow work practices associated with electrostatic sensitive devices.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- component attachment methods
- connection of hardware and plugs
- work health and safety (WHS) practices relevant to the removal and installation of basic aircraft system components
- approved maintenance documentation and aircraft publications relating to basic aircraft instrument systems
- handling precautions relating to:
 - electrostatic sensitive devices
 - gyroscopes and gimbals
- basic instrument system and component operating principles relating to:
 - atmospheric and barometry
 - terminology and unit of measurement conversion
 - aircraft instrumentation requirements
 - instrument panel layout
 - pressure sensing elements
 - pitot static systems and testing requirements
 - gyroscopic principles
 - direct reading compasses
 - remote reading gyro compasses
 - temperature sensors
 - fluid quantity indication systems
- general layout and components of the following systems:
 - flight systems, including:
 - altitude (direct reading altimeters)
 - attitude, including directional gyros and artificial horizons (both air and electrically driven), turn and slip and turn coordinator
 - airspeed
 - OAT
 - remote reading gyro compass systems

- piston engine indication systems, including:
 - direct reading temperature
 - direct reading pressure (for example, oil pressure)
 - speed, including mechanical and electric tachometers
 - manifold pressure/boost, including aneroid, siphon bellows and dual compartment types
- gas turbine engine indication systems, including:
 - temperature and pressure
 - speed, including mechanical and electric tachometers
 - torque
 - fuel flow
 - vibration
- auxiliary direct reading systems, including:
 - electrical
 - hydraulic pressure
 - pneumatic pressure and vacuum
 - basic fuel quantity indication
- regulatory requirements and standard procedures relevant to the removal and installation of basic aircraft system components.

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 removing and installing basic aircraft instrument system 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 removing and installing basic aircraft instrument system components
 - tools and equipment specified in maintenance manuals
 - items of ground support and test equipment found in most routine situations.

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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