Australian Government

Assessment Requirements for MEA205 Remove and install advanced aircraft instrument system components

Release: 1

Assessment Requirements for MEA205 Remove and install advanced aircraft instrument system components

Modification History

Release 1 - New unit of competency

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:

- locating and identifying flight instrument system components comprising:
  - engine system temperature, pressure (including thermocouples, sensor units and transmitters), speed (including mechanical and electrical tachometers), thrust (fan, propeller and jet), torque, fuel flow and vibration
  - auxiliary systems, including hydraulic pressure and temperature, transmission pressure and temperature, fuel storage quantities, fuel remaining/used, component position, i.e. flaps, landing gear, speed brakes and door/pylon locking
  - flight systems, including attitude, altitude, air speed, OAT and GPWS (where applicable to the enterprise)
- locating and identifying direct reading compasses, remote compass system components (flux valve, gyro, amplifier and indicator), and AHRS components
- locating and identifying FDR system components (where applicable to the enterprise)
- correct handling procedures and maintenance precautions relating to gyroscopes, gimbals, pitot/static systems (connections, heating and protrusions)
- applying relevant WHS practices.

It is essential that cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with, as well as work practices associated with electrostatic sensitive devices.
Evidence of transferability of skills and knowledge related to removal and installation is essential. This is to be demonstrated by application across a range of aircraft instrument system components as 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
- connection of hardware and plugs
- handling precautions for electrostatic sensitive devices
- relevant WHS practices
- the use of approved maintenance documentation and aircraft publications relating to basic and advanced instrument systems
- basic instrument system and component operating principles:
  - atmospherics 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
    - temperature sensors
    - fluid quantity indication systems
- general layout and components of the following systems:
    - flight systems, including:
        - altitude (direct reading, servo and encoding altimeters)
        - attitude, including DG and AH (both air and electrically driven) and turn and slip, and AHRS
        - airspeed, including ASI, machmeters and air data systems
        - VSI
        - angle of attack and stall warning/avoidance
        - OAT
        - GPWS
    - engine indication systems, 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
- remote compass systems
- FDR systems
- application of relevant WHS practices.
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Assessment Conditions

- Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in maintenance manuals. It is also expected that general-purpose tools, test and ground support equipment found in most routine maintenance situations would be used where appropriate.
- An understanding of the attachment methods, connection of hardware, and the need for adjustment or calibration and system operation as they relate to the work must be demonstrated 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) component from each of:
  - pitot/static system components, ASIs, VSIs, air data system components, machmeters, altimeters, including servo and encoding altimeters, angle of attack and stall warning/avoidance systems
  - turn and slip, DGs, AHs, AHRS components (where applicable to enterprise), remote reading gyro compass system components and direct reading compasses
  - turbine engine indication systems
  - transmitter/indicator measuring instrument systems (pressure, temperature, position)
  - fuel quantity indication and flow systems components
  - GPWS (may be omitted where not applicable to the enterprise)
  - FDR (may be omitted where not applicable to the enterprise).
- 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.
- Individuals being assessed who have already attained MEA204 Remove and install basic aircraft instrument system components or MEA275 Maintain basic light aircraft instrument systems and components will have covered a significant amount of the skill and knowledge requirements for this unit plus part of the performance criteria for Elements 1 and 2 and associated range statement items. The Log of Industrial Experience and Achievement records relating to MEA204 Remove and install basic aircraft instrument system components or MEA275 Maintain basic light aircraft instrument systems and components may be accepted as also meeting the evidence requirements for this unit in the applicable areas.

Links

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