Australian Government

MEA213 Inspect, test and troubleshoot advanced aircraft instrument systems and components

Release: 1

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Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot aircraft advanced instrument 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 part of the Avionic Certificate IV (Aircraft Maintenance Stream) training pathway.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation safety Authority (CASA).

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA205	Remove and install advanced aircraft instrument system components
MEA246	Fabricate and/or repair aircraft electrical components or parts

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1.	Inspect aircraft advanced instrument systems and components	1.1	Relevant maintenance documentation and modification status, including system defect reports where relevant, are used to identify specific inspection requirements
		1.2	Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual
		1.3	Instrument system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual while observing all relevant work health and safety (WHS) requirements
		1.4	Defects are correctly identified and reported
2.	Test/adjust aircraft advanced instrument systems and components	2.1	Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation
		2.2	Instrument system is functionally tested, in accordance with maintenance manual, for evidence of serviceability or malfunction
		2.3	System calibration or adjustments are performed in accordance with maintenance manual, as appropriate
3.	Troubleshoot aircraft advanced instrument systems	3.1	Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination
		3.2	Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting to line replacement level
		3.3	Specialist advice is obtained, where required, to assist with the troubleshooting process
		3.4	Instrument system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in accordance with standard enterprise procedures

3.5 Rectification requirements are determined

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Instrument systems and components include:

- 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 applicable to the enterprise)
- Flight data recorders (FDRs) (where applicable to the enterprise)

Procedures and requirements include:

- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 1 – equivalent to MEA213C Inspect, test and troubleshoot advanced aircraft instrument systems

Links

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