



**Australian Government**

# **MEA275 Maintain basic light aircraft instrument systems and components**

**Release: 1**

# **MEA275 Maintain basic light aircraft instrument systems and components**

## **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 test equipment to inspect, test and troubleshoot basic aircraft instrument systems and to remove and install components during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Applications include light fixed wing aircraft with fixed undercarriage and basic rotary wing aircraft with skids or floats and no powered flight controls powered by either a normally aspirated piston engine or small gas turbine.

The unit is part of the small aircraft maintenance Certificate III and IV Mechatronics training pathways.

Where a Civil Aviation Safety Authority (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**

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 basic aircraft 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 while observing all relevant work health and safety (WHS) requirements
- 1.3 Instrument system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual
- 1.4 Defects are correctly identified and reported

2. Test/adjust basic aircraft 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 basic aircraft instrument systems and components

- 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
4. Remove and install basic aircraft instrument system components
- 4.1 System is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety
- 4.2 Instrument component removal is carried out in accordance with the applicable maintenance manual while observing all relevant WHS requirements
- 4.3 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
- 4.4 Removed components are tagged and packaged in accordance with specified procedures
- 4.5 Instrument components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life
- 4.6 Physical installation of instrument components is performed in accordance with the applicable maintenance manual and regulatory requirements, ensuring appropriate adjustment/alignment is carried out
- 4.7 System is reinstated to correct operational condition in preparation for testing, as necessary
- 4.8 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

## 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.

**Applicable instrument systems and components include:**

- Pitot/static systems and components, airspeed indicators (ASI), vertical speed indicators (VSI), outside air temperature gauges (OAT) and counter-pointer altimeters
- Directional gyros (DGs) and artificial horizons (AHs) (air and electrically driven)
- Turn and bank and slip/turn coordinators
- Direct reading compasses
- Piston engine and gas turbine engine indication system components (direct reading measuring instruments and temperature indication)
- Electrical systems indication (voltage and current)
- Basic fuel quantity indication systems and components
- Vacuum indication components

**Procedures and requirements include:**

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

## Unit Mapping Information

Release 1 – equivalent to MEA275A Maintain basic light aircraft instrument systems and components

## Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>