



Australian Government

MEA354 Maintain light aircraft pneumatic systems

Release: 2

MEA354 Maintain light aircraft pneumatic systems

Modification History

Release 2. Equivalent to MEA354 Maintain light aircraft pneumatic systems with amended prerequisite codes.

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, troubleshoot and replace components of light aircraft pneumatic systems during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

Applications include light aircraft that have pneumatic systems where the air source is other than gas turbine engine bleed air. Bleed-air supplied pneumatic systems are covered by units MEA303 Remove and install aircraft pneumatic system components and MEA310 Inspect, test and troubleshoot aircraft pneumatic systems and components.

The unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway.

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

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

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.

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| 1. Inspect light aircraft pneumatic systems | 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 Components of pneumatic systems 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, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE) |
| | 1.4 Defects are correctly identified and reported |
| 2. Test/adjust light aircraft pneumatic 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 Pneumatic system is functionally tested in accordance with maintenance manual for evidence of serviceability or malfunction |
| | 2.3 System adjustment is performed in accordance with maintenance manual |
| 3. Troubleshoot light aircraft pneumatic 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 |

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| | 3.3 | Specialist advice is obtained, where required, to assist with the troubleshooting process |
| | 3.4 | Pneumatic 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 light aircraft pneumatic system components | |
| | 4.1 | System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure personnel safety |
| | 4.2 | Pneumatic system component removal is carried out in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE |
| | 4.3 | Required maintenance documentation is accurately completed and correctly processed |
| | 4.4 | Removed components are tagged, sealed and packaged in accordance with specified procedures |
| | 4.5 | Components to be installed are checked to confirm correct part numbers, serviceability and modification status |
| | 4.6 | Installation is carried out in accordance with the applicable maintenance manual |
| | 4.7 | 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.

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| Pneumatic systems include: | • De-icing systems, including de-icer boots on wings and tailplanes |
| Pneumatic system components include: | • Filters, valves, pumps, regulators and timers
• Gauges (direct reading)
• De-icer boots
• Rigid and flexible pipelines, hoses and fittings |
| Procedures and requirements include: | • Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise |

Unit Mapping Information

Release 2. Equivalent to MEA354 Maintain light aircraft pneumatic systems

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 MEA354 Maintain light aircraft pneumatic systems

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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:

- using hand skills, tools and test equipment in the testing, adjustment and troubleshooting of light aircraft pneumatic systems and components, including pneumatic system component removal and installation
- recognising pneumatic system and component defects/external damage, correct installation and security for the types of systems listed in the Range of Conditions
- performing system functional tests and checks to isolate system faults and assess post-maintenance serviceability
- effectively using maintenance documentation and relevant fault diagnosis guides in the troubleshooting process and for component removal and installation
- applying standard procedures
- observing of all relevant WHS procedures including the use of PPE and MSDS.

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with light aircraft pneumatic systems and components. It is essential that relevant procedures, cleanliness requirements and safety precautions are fully observed, understood and complied with. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

This shall be demonstrated through application across pneumatic systems and 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:

- WHS precautions relevant to light aircraft pneumatic system maintenance and how to obtain PPE and MSDS
- standard trade practices relating to tool and test equipment usage and installation/securing of system components
- types of light aircraft pneumatic system and components thereof:
 - vacuum
 - positive pressure

- high pressure
- pneumatic system layout, operation and characteristics and system component operation and construction, including electrical and instrument system interfaces
- how to configure the aircraft for inspection, testing and troubleshooting of pneumatic systems and components
- pneumatic system maintenance requirements and troubleshooting
- component attachment methods
- connection hardware and couplings
- electrical circuit isolation and plug removal and installation
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures.

Assessment Conditions

Links

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