



Australian Government

Department of Education, Employment and Workplace Relations

MEA209C Remove and install aircraft oxygen system components

Revision Number: 2

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Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated.

Unit Descriptor

This unit of competency is part of the Avionic Certificate IV AME training pathway and is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway. It covers the competencies required for the removal and installation of oxygen system components of both fixed and rotary wing aircraft. The unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

This unit requires application of hand skills and the use of maintenance documentation/publications in the removal and installation of aircraft oxygen system components.

Applications include fixed or rotary wing aircraft that have oxygen systems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

1. Remove oxygen system components
 - 1.1. Oxygen system is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted where necessary to ensure personnel safety
 - 1.2. Removal of *oxygen system components* is carried out in accordance with the applicable maintenance manual
 - 1.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
 - 1.4. Removed components are tagged, packaged or discarded in accordance with specified procedures
2. Install aircraft oxygen system components
 - 2.1. Oxygen system components to be installed are checked to confirm correct part numbers, modification status, serviceability and shelf life
 - 2.2. Oxygen system components to be installed are free from contamination and inspected for damaged flair ends and fittings
 - 2.3. Component installation is physically carried out in accordance with the applicable maintenance manual
 - 2.4. System is reinstated to correct physical condition in preparation for testing, as necessary
 - 2.5. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying appropriate OHS practices and using approved maintenance documentation and aircraft publications relating to aircraft oxygen systems and components
- demonstrating the procedure to replenish a dry breathing oxygen system, including:
 - correct identification of oxygen ground trolleys
 - maximum charging pressures for low and high pressure systems
 - safety precautions to be adhered to during replenishment
 - correct order of procedural replenishment steps.
- demonstrating the procedure to purge a dry breathing oxygen system, including:
 - reasons for the requirement to undertake a purging operation
 - identification of acceptable system purging gases
 - safety precautions to be adhered to during purging
- employing correct techniques when purging oxygen storage cylinders or systems

Required knowledge

Look for evidence that confirms knowledge of:

- OHS practices relevant to oxygen system maintenance
- component attachment methods
- connection of hardware and couplings
- oxygen system isolation
- the properties of aircraft oxygen and requirements for aircrew/passengers.
- the layout of low and high-pressure dry breathing oxygen systems and components
- the methods by which gaseous dry breathing oxygen is stored in both the aircraft and within the workplace environment. Reference to storage trolleys, aircraft cylinders and chemical oxygen cylinders is required
- the methods used to locate, identify and access oxygen system components for removal and installation
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide

<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to remove and install the components of aircraft oxygen systems while observing all relevant safety and component handling precautions.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>It is essential that oxygen system cleanliness requirements and safety precautions applicable to system component handling are fully observed, understood and complied with. These cleanliness requirements extend to all tooling and hardware associated with oxygen system maintenance.</p> <p>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 oxygen system components listed in the Range Statement. An understanding of the attachment methods, connection hardware, and the need for adjustment or rigging and system operation as it relates 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.</p> <p>A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 and 2 (Groups 3 and 4 may be omitted where they are 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.</p>
<p>Context of and specific resources for assessment</p>	<p>Competency should be assessed in the workplace or simulated workplace using tools and equipment specified in the maintenance manuals. It is expected that dedicated tools, test and ground support equipment is used in routine oxygen situations.</p>
<p>Method of assessment</p>	

Guidance information for assessment	
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Range Statement

<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Oxygen system components	<p>Oxygen system components may include:</p> <ol style="list-style-type: none"> 1. Oxygen pressure cylinders, valves, gauges 2. Regulators, masks (including other integrated systems), pipes, hoses and fittings 3. Chemical generators 4. LDBO converters
Application	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Aviation maintenance

Competency field

Co-requisite units

Not applicable