



Australian Government

Department of Education, Employment and Workplace Relations

MEA357A Inspect, test and repair aircraft fabric surfaces

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 Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway. It covers the competencies required to inspect, test and repair aircraft fabric surfaces.

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the applicable 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, knowledge of fabric covering systems and maintenance publications to inspect, test and repair aircraft fabric surfaces.

Applications include aircraft and aircraft components that are covered with fabric.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

ME A101B	Interpret occupational health and safety practices in aviation maintenance
ME A103B	Plan and organise aviation maintenance work activities
ME A105C	Apply quality standards applicable to aviation maintenance processes
ME A107B	Interpret and use aviation maintenance industry manuals and specifications
ME A108B	Complete aviation maintenance industry documentation
ME A109B	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. Inspect/test aircraft fabric surfaces
 - 1.1. Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify specific *inspection/testing* requirements
 - 1.2. Appropriate preparation and access to the aircraft structure is undertaken to allow for proper inspection in accordance with maintenance documentation
 - 1.3. Aircraft fabric-covered surfaces are inspected/tested for signs of damage, deterioration or loss of tensile strength in accordance with maintenance documentation and approved procedures
 - 1.4. Damage or deterioration is assessed against limits specified by maintenance manual or other approved data to determine if *repair*, restoration or replacement is required
2. Repair aircraft fabric surfaces
 - 2.1. Extent of damage is correctly assessed to assist in determining repair procedure
 - 2.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personal safety and freedom from damage
 - 2.3. Appropriate repair scheme is identified in accordance with maintenance manual and/or approved data
 - 2.4. All materials and equipment required are organised
 - 2.5. Fabric repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out
 - 2.6. Work area is cleaned of all waste material or contaminants
 - 2.7. Components are adjusted and/or re-balanced, where necessary, to operate within prescribed specifications
 - 2.8. Required maintenance/repair documentation is completed and processed in accordance with standard enterprise procedures
 - 2.9. Where required, repaired components or assemblies are tagged, sealed and packaged or cradled in accordance with specified procedures

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS procedures, including the selection and use of MSDS and PPE
- using approved maintenance documentation and aircraft publications relating to aircraft fabric surfaces
- testing the soundness of fabric surfaces
- recognising and assessing fabric surface damage and deterioration
- recognising defective doping
- identifying and applying applicable repair and surface rejuvenation schemes

Required knowledge

Look for evidence that confirms knowledge of:

- OHS hazards associated with fabric covering processes and how to obtain relevant MSDS and PPE
- regulatory requirements relating to the repair of fabric surfaces
- industry publications relating to the repair of fabric surfaces
- aircraft fabric surface covering and finishing materials and principles
- fabric-covered component attachment methods
- types of fabric and related characteristics
- types of tape, cord and thread and their relative advantages and disadvantages
- cements and finishing scheme materials, their characteristics, uses, storage requirements and related safety precautions
- inspection and testing requirements for existing fabric coverings and new fabric prior to use
- the criteria for fabric rejuvenation, repairs and repair methods, including the need for re-balancing of flight control surfaces after fabric rejuvenation or repair
- the application of flight loads to fabric-covered surfaces, and related failure mechanisms

Evidence Guide

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>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to apply hand skills, knowledge of fabric surfaces and maintenance publications to inspect, test and repair aircraft fabric surfaces.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>The underlying skills inherent in this unit should be transferable across a range of inspection and testing applications associated with maintenance of aircraft fabric surfaces. It is essential that the procedures take into account all aircraft and personal safety precautions, especially with regard to the use of finishing scheme materials.</p> <p>Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft fabric surfaces is essential. This may be demonstrated through application across a range of aircraft fabric surfaces. Ability to interpret inspection, testing and repair procedures and specifications (allowable limits) and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads.</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 all items in each of Groups 1 to 9, as listed in the Range Statement. 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 work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.</p>
<p>Method of assessment</p>	
<p>Guidance information for</p>	

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
Inspection and testing	<p>Inspection/testing for:</p> <ol style="list-style-type: none"> 1. Blockage of drainage and water and dirt collection points 2. Deterioration of finishing scheme 3. Deterioration of fabric tensile strength 4. Damage to inspection panels and zips
Repair	<p>Repair of fabric surface:</p> <ol style="list-style-type: none"> 5. By surface rejuvenation 6. By stitching 7. By unsewed doped-on repair 8. Correct application of finishing scheme 9. Recognition of requirement to re-balance fabric-covered control surfaces after rejuvenation or repair of fabric covering
Application	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> • scheduled or unscheduled maintenance • 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