



Australian Government

MEA357 Inspect, test and repair aircraft fabric surfaces

Release: 2

MEA357 Inspect, test and repair aircraft fabric surfaces

Modification History

Release 2. Equivalent to MEA357 Inspect, test and repair aircraft fabric surfaces with amended prerequisite codes.

Application

This unit of competency requires application of hand skills, knowledge of fabric covering systems and maintenance publications to inspect, test and repair aircraft fabric surfaces during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

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

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.
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 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 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 while observing all relevant WHS requirements, including the use of MSDS and items of PPE 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

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.

Fabric surfaces to be inspected and tested for:

- Blockage of drainage and water and dirt collection points
- Deterioration of finishing scheme
- Deterioration of fabric tensile strength
- Damage to inspection panels and zips

Repair of fabric surface includes:

- Surface rejuvenation
- Stitching
- Unsewed doped-on repair
- Correct application of finishing scheme
- Recognition of requirement to re-balance fabric-covered control surfaces after rejuvenation or repair of fabric covering

Procedures and requirements include:

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

Unit Mapping Information

Release 2. Equivalent to MEA357 Inspect, test and repair aircraft fabric surfaces

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 MEA357 Inspect, test and repair aircraft fabric surfaces

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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:

- applying relevant WHS procedures, including the selection and use of PPE and MSDS
- 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.

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.

This shall 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.

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 hazards associated with fabric covering processes and how to obtain relevant MSDS and use 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.

Assessment Conditions

- 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 applicable general-purpose tools and test equipment found in most routine situations would be used where appropriate.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on all of the following:
 - inspection/testing for:
 - blockage of drainage and water and dirt collection points
 - deterioration of finishing scheme
 - deterioration of fabric tensile strength
 - damage to inspection panels and zips
 - repair of fabric surface:
 - by surface rejuvenation
 - by stitching
 - by unsewed doped-on repair
 - correct application of finishing scheme
 - recognition of requirement to re-balance fabric-covered control surfaces after rejuvenation or repair of fabric covering.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.

Links

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