



Australian Government

Department of Education, Employment and Workplace Relations

MEA359A Inspect and repair aircraft wooden structures

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 and repair aircraft wooden structures.

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 woodworking hand skills and knowledge and the use of maintenance publications to inspect and repair aircraft wooden structures.

Applications include all aircraft with wooden structures and wooden components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activities
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

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| 1. Inspect aircraft wooden structure | <ul style="list-style-type: none">1.1. Relevant maintenance documentation and modification status, including defect reports, where relevant, are used to identify specific inspection requirements1.2. Appropriate preparation and access to the aircraft structure is undertaken to allow for proper inspection and testing in accordance with maintenance documentation1.3. Aircraft wooden structure is visually or physically checked for signs of deterioration, deformation defects or damage in accordance with maintenance documentation and approved procedures1.4. Damage or defects are assessed against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required |
| 2. Repair aircraft wooden structure | <ul style="list-style-type: none">2.1. Extent of deterioration or damage is correctly assessed to assist in determining repair procedure2.2. Structure is supported and prepared in accordance with the applicable maintenance manual to ensure personal safety and freedom from damage2.3. Appropriate repair scheme is identified in accordance with structural repair manual and/or approved data2.4. Specialist advice is obtained in establishing an approved repair scheme where a standard repair scheme cannot be identified or damage is beyond limits2.5. All materials and equipment required are organised2.6. Structural repairs are performed, in accordance with approved repair scheme, ensuring that aircraft standard practices are used and process requirements are carried out2.7. Finishing scheme is restored2.8. Work area is cleaned of all waste material or contaminants2.9. Components are adjusted, where necessary, to operate within prescribed specifications2.10. Required maintenance/repair documentation is completed and processed in accordance with standard enterprise procedures2.11. 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 correct selection and use of MSDS and PPE
- using approved maintenance documentation and aircraft publications relating to aircraft wooden structure
- identifying and using woodworking tools
- identifying aircraft structural timbers and their characteristics
- identifying potential causes of deterioration in wooden structural components
- identifying wooden structure defects and damage
- identifying the condition of glue lines
- fabricating and fitting repair members
- gluing of wooden structure
- restoring surface finish after repair

Required knowledge

Look for evidence that confirms knowledge of:

- OHS hazards relating to wooden structure repair materials and how to obtain relevant MSDS and PPE
- aircraft wooden construction principles and inspection techniques
- wooden structural component attachment methods
- the effects of environmental factors on aircraft wooden structures
- wooden structure glues and application methods
- wooden component assembly methods and testing of joints
- wooden structure finishing schemes for exterior and interior surfaces
- the application of flight loads to aircraft wooden structural components and joints, and related failure mechanisms
- wooden component fabrication and repair techniques

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.

Overview of assessment	A person who demonstrates competency in this unit must be able to apply woodworking hand skills and use applicable tools and maintenance publications to inspect and repair aircraft wooden structures while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of inspection, testing and repair applications associated with maintenance of aircraft wooden structures. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure. Evidence of transferability of skills and knowledge related to inspection, testing and repair of aircraft wooden structures is essential. This may be demonstrated through application across a range of aircraft wooden structures. Ability to interpret inspection 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. 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 10 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.
Context of and specific resources for assessment	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.
Method of assessment	
Guidance information for assessment	

Range Statement

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.

Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Inspection and testing	Inspection and/or testing of: 1. Drainage and water and dirt collection points 2. Fabric covered plywood surfaces 3. Single and double plywood skin 4. Structural timbers and bolt holes 5. Glued joint strength 6. Glue lines Inspection techniques may include: • visual inspection, physical checks, mensuration and alignment
Repair	Repair of: 7. Load carrying structural timbers 8. Plywood skin 9. Spars and ribs
Finishing scheme	10. Refinishing of structure after repair using approved finishing scheme
Application	Application of this unit may relate to: • 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