



Australian Government

MEAMEC0057 Repair the structure of non-pressurised small aircraft

Release: 1

MEAMEC0057 Repair the structure of non-pressurised small aircraft

Modification History

Release 1. Application changed. Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA370 Repair the structure of non-pressurised small aircraft.

Application

This unit describes the skills and knowledge required to apply procedures and techniques associated with the repair of non-pressurised small aircraft structure during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team and involves the performance of a limited range of metal and composite repairs.

Where extensive repair involving the replacement of major structural components, such as wing spars and fuselage frames, is required the applicable unit is MEA371 Perform major repairs and modifications to small aircraft metal structure.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEAMEC0056 Inspect and maintain structures and related components of non-pressurised small aircraft

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare to undertake repair	1.1 Assess extent of damage to assist in determining repair procedure 1.2 Identify appropriate repair scheme in accordance with structural repair manual or approved data 1.3 Obtain specialist (structures personnel) or supervisory advice in

Elements	Performance Criteria
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	establishing an approved repair scheme where a standard repair scheme cannot be identified, or damage is out of limits 1.4 Organise all materials and equipment required
2. Repair aircraft structure	2.1 Perform structural repairs in accordance with approved repair scheme ensuring that aircraft standard practices are used, and process requirements are carried out while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDSs) and items of personal protective equipment (PPE) 2.2 Employ preventative maintenance techniques to preserve the integrity of aircraft structure 2.3 Clean work area of all waste material or contaminants 2.4 Complete required maintenance documentation and process in accordance with standard enterprise procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance documentation and procedures.
- Writing skills to complete maintenance documentation.
- Numeracy skills to interpret and communicate technical information.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA370 Repair the structure of non-pressurised small aircraft.

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 MEAMEC0057 Repair the structure of non-pressurised small aircraft

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- undertake one repair task from each of the following groups:
 - remove corrosion by chemical and mechanical methods
 - restore protective coatings
 - apply sealants and jointing compounds
 - generate a freehand precision hole
 - remove and install structural hardware and fastening devices
 - remove and replace bushes, bearings and bearing surfaces
 - metal scab patch, flush, splice, lap and formed section repair
 - composite external patch, scarf and stepped repairs
- recognise each type of damage:
 - impact damage
 - fatigue cracking
 - corrosion
 - delamination of composites and bonded structures
- identify various aircraft metals and their basic properties
- correctly interpret repair scheme drawings, including third angle projection, isometric, sectional formats and hand sketches
- use appropriate hand tools and machines, including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins)
- apply correct removal, installation and repair techniques for:
 - a range of rivets (blind and solid) using hand, squeeze and pneumatic situations
 - a range of close tolerance fasteners (standard and oversize – hillocks and taper locks), including hole preparation
 - threaded devices, including internal and external thread cutting, Helicoil inserts and damaged stud replacement
 - hardware assembled by close tolerance fits using heat, cooling and force methods, including bearings, bushes and inserts

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- work health and safety (WHS) procedures, including the use of personal protective equipment (PPE) and material safety data sheets (MSDSs) relating to repair
- requirements for handling and storing aircraft metals and composite materials, including sealing agents, to industry standards
- structural flight loads and aerodynamic requirements
- means of identifying aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour
- structural and non-structural component methods of attachment, faying surface treatment and fuel tank sealing
- assessment of structural damage:
 - types and classes of mechanical damage
 - types of corrosion and determining the extent of damage
 - relevant documentation and manuals
 - damage limits and repair schemes for metallic and non-metallic structure
- procedures for the fabrication and fitment of metal repairs:
 - scab patch
 - flush patch
 - splice
 - lap
 - formed section
- corrosion removal and passivation
- procedures for performing composite repairs:
 - external patch
 - scarf patch
 - stepped repairs
 - bolted repairs
- repair of integral fuel tanks and sealing of faying surfaces, including specific WHS and PPE requirements
- surface finishes and methods of restoration, including specific WHS and PPE requirements
- how to obtain MSDSs
- maintenance and structural repair manuals, including servicing schedules
- regulatory requirements and standard procedures relating to repair.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Defence Aviation Safety Authority (DASA) and Civil Aviation Safety Authority (CASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in repairing the structure of non-pressurised small aircraft. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - workplace procedures, manufacturing specifications, codes, standards, manuals, and reference materials relevant to repairing the structure of non-pressurised small aircraft
 - tools and equipment specified in maintenance documentation
 - general-purpose tools and test equipment found in most routine situations.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience and achievement.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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