



Australian Government

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

Release: 1

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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 MEA369 Inspect and maintain structures and related components of non-pressurised small aircraft.

Application

This unit describes the skills and knowledge required to apply procedures and techniques associated with the inspection and maintenance of non-pressurised small aircraft structures during scheduled or unscheduled maintenance, including special inspections required after events, such as heavy landings, overstress or flight through heavy turbulence.

The unit also covers the performance of a limited range of minor metal and composite repairs that are classified as elementary maintenance. Also required is an application of procedures and techniques associated with the removal and installation of related structural and non-structural components, including items such as internal trim, seats and emergency equipment. Work may be performed individually or as part of a team.

This unit covers removable components that are installed using bolts or screws. Where component removal and installation require the removal and installation of rivets, this is covered by the unit MEAMEC0058 Perform major modifications and repairs 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

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

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. Inspect aircraft structure	1.1 Use relevant maintenance documentation to identify specific inspection requirements 1.2 Undertake appropriate preparation and access to the aircraft structure to allow for proper inspection in accordance with maintenance documentation 1.3 Visually or physically check aircraft structure for signs of deformation defects or damage 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 (MSDSs) and items of personal protective equipment (PPE) 1.4 Assess damage or defects against damage or wear limits specified by structural repair manual or other approved data to determine if repair or replacement is required 1.5 Complete maintenance documentation and process in accordance with standard enterprise procedures
2. Maintain aircraft structure	2.1 Perform minor repairs classified as elementary maintenance in accordance with approved repair methods ensuring that aircraft standard practices are used, and process requirements are carried out while observing all relevant WHS requirements, including the use of MSDSs and items of PPE 2.2 Employ preventative maintenance techniques to preserve the integrity of aircraft structure 2.3 Obtain required specialist or supervisory advice to assist with the troubleshooting process 2.4 Clean work area of all waste material or contaminants 2.5 Complete required maintenance documentation and process in accordance with standard enterprise procedures
3. Remove components	3.1 Support and prepare structure in accordance with the applicable maintenance manual to ensure personnel safety and freedom from damage to aircraft or component during component removal 3.2 Carry out component removal in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE 3.3 Complete required maintenance documentation and process in

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	accordance with standard enterprise procedures 3.4 Tag and prepare removed components for transport, where applicable and in accordance with specified procedures
4. Install components	4.1 Check structural and/or non-structural components to be installed to confirm correct part numbers, serviceability and modification status 4.2 Carry out component installation in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE 4.3 Remove support or safety equipment at an appropriate time to ensure personnel safety and freedom from structural damage 4.4 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 MEA369 Inspect and maintain structures and related components 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 MEAMEC0056 Inspect and maintain structures and related components of non-pressurised small aircraft

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Performance Evidence

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

- conduct inspection and testing for each of the following:
 - non-ferrous and ferrous alloys and composite (FRP) materials used in aircraft construction
 - structural fastening and attachment hardware and/or devices
 - seals and sealants
 - glass and moulded plastics
 - preparation for application of non-destructive testing (NDT) techniques
 - doors, hinges and locking mechanisms for damage or misalignment
 - inspections applicable to each of safe life, damage tolerant and fail-safe structure relevant to enterprise
 - ageing aircraft inspection programs
 - inspection after abnormal events
- identify each type of damage:
 - impact damage
 - fatigue cracking
 - corrosion
 - delamination of composites and bonded structures
- carry out one minor elementary maintenance repair task from at least three of the following groups:
 - repair of non-structural fairings, cover plates and cowlings
 - stop drilling of cracks and bonding to acrylic or Perspex windscreens
 - minor repair to fabric surfaces
 - restoration of preservative or protective materials
- carry out one removal and installation task from each of the following groups:
 - removable components of wings, tail booms, pylons, empennage, skids, fairings and nacelles

- removable components or sections of non-pressurised fuselages
- non-pressurised fuselage entry, cargo, access doors and associated seals (including checking and adjustment of all doors and access panels and associated locking mechanisms)
- non-pressurised fuselage windows and transparent panels
- floor panels.
- carry out cleaning procedures to enable structure inspection
- 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
- perform metal, composite or fabric repairs classified as elementary maintenance
- restore aircraft structure sealing and surface finishes
 - check and adjust all doors and access panels, including locking mechanisms
- remove and install emergency equipment.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- work health and safety (WHS) procedures for non-pressurised small aircraft structures, including using personal protective equipment (PPE) and material safety data sheets (MSDSs)
- construction methods and materials used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels
- definition of structural terms, including safe life, damage tolerant, failsafe, stress, strain, shear and cycles
- inspection requirements for metal and composite structure, including:
 - ageing aircraft inspection requirements
 - safe life structure
 - damage tolerant structure
 - fail safe structure
 - inspection following abnormal events
- potential causes of structural failure
- NDT methods and application of the various techniques
- methods of construction and assessment of common defects in aircraft plastic transparencies
- basic constructional features and assessment of common defects in glass windscreens

- aircraft fabric coverings and methods for performance of minor repairs (classified as elementary maintenance)
- the various forms of structural corrosion, including the causes and structural effects of corrosion on aircraft
- the terms associated with composite materials and types of composite materials
- non-structural component methods of attachment and faying surface treatment
- non-pressurised fuselage aircraft doors, related seals and window and transparent panel attachment methods and sealing
- aircraft interior fittings (trim, linings, seats and floor panels) construction and attachment methods
- the location and attachment or stowage methods for emergency equipment
- 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
- how to perform minor repairs (classified as elementary maintenance) to metal and composite structure
- surface finishes and methods of restoration, including specific WHS and PPE requirements
- how to obtain MSDSs
- maintenance and structural repair manuals for structures and components, including servicing schedules
- regulatory requirements and standard procedures relating to inspection and maintenance of structures and components.

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 inspecting and maintaining structures and related components 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 inspecting and maintaining structures and related components of non-pressurised small aircraft
 - structures, components, 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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