



Australian Government

MEASTR0001 Inspect aircraft structures

Release: 1

MEASTR0001 Inspect aircraft structures

Modification History

Release 1. Unit code changed. Application changed. Elements and 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 MEA401 Inspect aircraft structures.

Application

This unit describes the skills and knowledge required to apply hand skills and maintenance documentation and manuals to inspect aircraft structure and identify damage and deterioration during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

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. Plan and prepare to inspect aircraft structure	1.1 Identify specific inspection requirements using maintenance documentation and modification status, including relevant defect reports 1.2 Prepare aircraft structure and access to allow for comprehensive inspection in accordance with maintenance documentation while

	observing all relevant work health and safety (WHS) requirements, including use of material safety data sheets (MSDSs) and items of personal protective equipment (PPE)
2. Assess and document aircraft structure maintenance requirements	2.1 Visually and physically check aircraft structure for signs of deformation, defects or damage in accordance with maintenance documentation and approved procedures while observing all relevant WHS requirements, including use of MSDSs and items of PPE 2.2 Assess damage or defects against damage or wear limits specified in structural repair manual, or other approved data, to determine if repair or replacement is required 2.3 Complete and process maintenance documentation 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 manuals, inspection procedures and specifications (allowable limits).
- Writing skills to record and report on defects and faults and their causes.
- Numeracy skills to interpret and communicate technical information, take and interpret measurements and readings, and interpret data from test sets.

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 MEA401 Inspect aircraft structures.

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 MEASTR0001 Inspect aircraft structures

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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:

- prepare for non-destructive testing (NDT) (access to relevant structural zones and components)
- inspect (using physical and visual checks, mensuration and alignment) at least one aircraft component from each of the following groups, during scheduled and unscheduled maintenance:
 - 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
 - doors, hinges and locking mechanisms for damage/misalignment
 - damage-tolerant and fail-safe structure relevant to enterprise
- undertake the following in performing inspections of the aircraft structures:
 - identify various aircraft metals and their basic properties to correctly assess damage
 - identify potential causes of structural failure to correctly assess damage
 - demonstrate appropriate cleaning procedures to enable structure inspection
 - demonstrate correct inspection procedures, in accordance with aircraft maintenance manuals and procedures
 - perform aircraft mensuration and alignment checks during inspection
 - identify damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of:
 - impact
 - fatigue
 - corrosion
 - identify the various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft
 - identify composite materials used in aircraft construction, associated safety precautions and hazards

- inspect damage and assessing composite components/structures for:
 - impact damage
 - fatigue
 - disbonding
 - moisture damage
 - heat damage
 - ultraviolet (UV) damage.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- aircraft construction principles
- structural component attachment methods
- construction methods used in:
 - fuselage sections
 - wing sections
 - engine nacelles and mounts
 - windows and window frames
 - doors, locks and access panels in pressurised and unpressurised aircraft
- structural terms, i.e. safe-life, damage-tolerant, failsafe, stress, strain, shear and cycles
- structural flight loads
- inspection requirements for metal and composite structure, including:
 - ageing aircraft inspection requirements
 - safe-life structure
 - damage-tolerant structure
 - fail-safe structure
- procedures and methodology for performing aircraft mensuration and alignment checks
- describing NDT methods and application of the various techniques
- describing construction methods of, and assessing common defects in, aircraft plastic transparencies
- describing basic constructional features of, and assessing common defects in, glass windscreens
- defining the terms associated with composite materials
- work health and safety (WHS) procedures for inspecting aircraft structures
- personal protective equipment (PPE) required for inspecting aircraft structures.
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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 aircraft structures. 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 aircraft structures
 - tools and equipment specified in maintenance documentation
 - general-purpose tools and test equipment required for inspecting aircraft structures.

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.

Links

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