



Australian Government

MEASTR0017 Perform major disassembly and reassembly on aircraft structure

Release: 1

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Modification History

Release 1. 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 MEA423 Aircraft structure major disassembly and reassembly.

Application

This unit describes the skills and knowledge required to apply hand skills and use maintenance publications, drawings, and appropriate jigs, fixtures and tools to disassemble and reassemble aircraft structures during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

Applications include fixed and rotary wing aircraft.

Structural repair and modification is covered by units MEASTR0016 Repair and modify aircraft metal structure or MEASTR0002 Modify and repair aircraft composite materials structures and components. Fabrication of replacement components covered by units MEASTR0014 Fabricate basic structural components for aircraft and MEASTR0015 Fabricate advanced structural components for aircraft.

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

MEASTR0001 Inspect aircraft structure

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. Interpret specifications and	1.1 Determine procedure for assembly and disassembly of structure in order to plan equipment use

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Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
organise materials	1.2 Select jigs, fixtures or bracing methods to maintain contour and structural integrity during disassembly and assembly operations 1.3 Organise required components and equipment in accordance with standard enterprise procedures
2. Prepare aircraft or sub-assembly for structural disassembly	2.1 Support structure with required jigs, fixtures or bracing 2.2 Provide access by removing structural components as required
3. Disassemble aircraft structure or sub-assembly	3.1 Remove structural hardware and fasteners in accordance with aircraft standard practices 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) 3.2 Perform required tagging on disassembled components to facilitate correct reassembly
4. Prepare components and tooling for assembly	4.1 Apply required sealants and restore aircraft structure surface finishes 4.2 Check replacement component alignment for conformance to specifications prior to fastener hole generation 4.3 Perform hole location or relocation in accordance with specification procedures and standard practices 4.4 Follow standard practices in hole generation sequencing to ensure that assembly stress defects are not built in 4.5 Disassemble, clean and deburr components and apply surface treatments prior to final assembly while observing all relevant WHS requirements, including the use of MSDSs and items of PPE
5. Assemble aircraft structure or sub-assembly	5.1 Select and apply required sealants or adhesives in accordance with assembly specifications or documentation while observing all relevant WHS requirements, including use of MSDSs and items of PPE 5.2 Position and secure components with appropriate temporary fastening devices for accurate assembly 5.3 Select and install fasteners in accordance with assembly specifications or manuals
6. Inspect completed assemblies	6.1 Inspect assembled components to confirm dimensional accuracy and specifications are met 6.2 Use checking or testing equipment as required to ensure requirements are met

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	6.3 Check aircraft mensuration or compliance with applicable maintenance manuals as required 6.4 Complete and process required 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.
- Writing skills to complete documentation.
- Numeracy skills to interpret technical information and check measurements.

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 MEA423 Aircraft structure major disassembly and reassembly.

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 MEASTR0017 Perform major disassembly and reassembly on aircraft structure

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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:

- perform major disassembly and reassembly on aircraft structures during scheduled or unscheduled maintenance on elements from each of the following groups:
 - assembly of aircraft sub-assemblies or end items from detailed parts using jigs and fixtures
 - disassembly and reassembly of aircraft structure, such as wings, tailplanes or fuselage sections, using trestling, jigs and fixtures
 - replacement of major structural load carrying members, for example, skins, longerons, spars, frames and bulkheads.
- safely handle heavy components during removal and assembly of structures being worked on
- identify various aircraft metals/composite materials and their basic metallurgy properties by interpretation of markings, numbering systems or visual, chemical or mechanical means to inform requirements
- handle and store aircraft metal and composite components to industry standards during and after assembly work
- identify aircraft structural assembly fasteners (metal and composite) by interpretation of markings, numbering systems, size, shape and colour to inform suitable selections for structures being worked on
- use appropriate hand tools and machines to remove and assemble aircraft structural components, parts, sections and skin, including riveting equipment, drilling equipment, aligning tools, reamers and material fasteners (grip pins)
- apply correct removal and installation techniques for general and close tolerance fasteners (rivets, standard and oversize hilocks), including hole preparation and location techniques.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- aircraft construction principles, including the causes of structural fatigue and corrosion
- describing the basic construction methods used to assemble:

- fuselage (pressure and non-pressurised)
- wings, vertical and horizontal stabilisers, rotary wing tail cones and pylons
- engine nacelles/pylons
- doors and windows, including seals, sealants and locking mechanisms
- assembly procedures, including:
 - drilling, reaming and countersinking
 - fitting fasteners and rivets
 - applying adhesives and sealants
 - fitting hardware
 - applying corrosion inhibitors and protective coatings
- assembly stress defects, including:
 - oil canning
 - buckling
 - contour misalignment
 - stress raisers
- material specifications for aluminium alloys and steel alloys used in aircraft structure
- composite cloths, matrix materials and adhesives
- structural material identification by markings and numbering systems
- material identification by chemical, electrical and mechanical methods
- material storage requirements
- hardware types and specifications
- composite bonding methods
- identification of hardware
- sealants used in aircraft structure and their application and handling
- chemical surface treatments
- electroplating
- paints and finishes
- work health and safety (WHS) precautions for disassembly and reassembly of aircraft structures, including safe handling of heavy components
- how to access and apply material safety data sheets (MSDSs)
- personal protective equipment (PPE) for disassembly and reassembly of aircraft structures.
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Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA) 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 disassembling and reassembling 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 disassembling and reassembling aircraft structures
 - tools and equipment specified in the aircraft maintenance manuals
 - general-purpose tools and ground support 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.

Links

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