



Australian Government

MEA423 Aircraft structure major disassembly and reassembly

Release: 2

MEA423 Aircraft structure major disassembly and reassembly

Modification History

Release 2 – Assessment Conditions amended to permit assessment in a simulated workplace

Application

This unit of competency requires application of hand skills and use of maintenance publications, drawings, and appropriate jigs, fixtures and tools to disassemble and reassemble aircraft structure during scheduled or unscheduled maintenance. Structural repair/modification is covered by MEA422 Repair/modify aircraft metal structure or MEA405 Repair/modify aircraft composite material structure/components. Where fabrication of replacement components is required the applicable units are MEA420 Fabricate basic structural components for aircraft and MEA421 Fabricate advanced structural components for aircraft.

Work may be performed individually or as part of a team.

Applications include fixed and rotary wing aircraft.

This unit of competency is part of the Aeroskills Structures Maintenance Certificate IV training pathway. It is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Pre-requisite Unit

MEA401 Inspect aircraft structure

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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| 1. Interpret specifications and organise materials | 1.1 The procedure for assembly/disassembly of structure is determined in order to plan equipment use |
| | 1.2 Appropriate jigs, fixtures or bracing methods are |

- selected to ensure maintenance of contour/structural integrity during disassembly/assembly operations
- 1.3 All components and equipment are organised
2. Prepare aircraft or sub-assembly for structural disassembly
- 2.1 Structure is supported with appropriate jigs, fixtures or bracing, as required
- 2.2 Structural components are removed, as required, to provide access
3. Disassemble aircraft structure or sub-assembly
- 3.1 Aircraft standard practices are applied in the removal of structural hardware and fasteners while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE)
- 3.2 Disassembled components are tagged, as required, to facilitate correct reassembly
4. Prepare components and tooling for assembly
- 4.1 Jigs and fixtures are set up to ensure accuracy of component assembly
- 4.2 Replacement component alignment is checked for conformance to specifications prior to fastener hole generation
- 4.3 Hole location/relocation is carried out in accordance with specification procedures and standard practices
- 4.4 Standard practices in hole generation sequencing are followed to ensure that assembly stress defects are not built in
- 4.5 Components are disassembled, cleaned, deburred and surface treatments applied prior to final assembly while observing all relevant WHS requirements, including the use of MSDS and items of PPE
5. Assemble aircraft structure or sub-assembly
- 5.1 Sealants and/or adhesives are selected and applied in accordance with assembly specifications or applicable documentation while observing all relevant WHS requirements, including the use of

MSDS and items of PPE

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| 5.2 | Components are positioned and secured with appropriate temporary fastening devices for accurate assembly | | | | | | | | |
| 5.3 | Fasteners are selected and installed in accordance with assembly specifications or applicable manuals | | | | | | | | |
| 6. Inspect completed assemblies | <table border="0"> <tr> <td style="vertical-align: top; padding-right: 20px;">6.1</td> <td style="vertical-align: top;">Assembled components are inspected to confirm dimensional accuracy and specifications are met</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">6.2</td> <td style="vertical-align: top;">Checking or testing equipment is used, where appropriate, to ensure requirements are met</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">6.3</td> <td style="vertical-align: top;">Aircraft mensuration is checked for compliance with applicable maintenance manuals, where necessary</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">6.6</td> <td style="vertical-align: top;">Required documentation is completed and processed in accordance with standard enterprise procedures</td> </tr> </table> | 6.1 | Assembled components are inspected to confirm dimensional accuracy and specifications are met | 6.2 | Checking or testing equipment is used, where appropriate, to ensure requirements are met | 6.3 | Aircraft mensuration is checked for compliance with applicable maintenance manuals, where necessary | 6.6 | Required documentation is completed and processed in accordance with standard enterprise procedures |
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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Scope of unit applies to:

- 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

- Assembly procedures include:**
- bulkheads
 - Drilling, reaming and counter-sinking
 - Fitting of fasteners and rivets
 - Application of adhesives and sealants
 - Fitting of hardware
 - Application of corrosion inhibitors and protective coatings
- Assembly stress defects include:**
- Oil canning, buckling, contour misalignment and stress raisers
- Procedures and requirements include:**
- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2 -Assessment Conditions amended to permit assessment in a simulated workplace. Equivalent.

Release 1 – equivalent to MEA423A Aircraft structure major disassembly and reassembly

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>