



Australian Government

Assessment Requirements for MEA371 Perform major repairs and modifications to small aircraft metal structure

Release: 1

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Modification History

Release 1 - New unit of competency

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS regulations and practices, including the use of MSDS and PPE
- using approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying aircraft structural assembly fasteners by interpretation of markings, numbering systems, size, shape and colour
- correctly interpreting and/or producing repair scheme/modification drawings, including third angle projection, isometric, sectional formats and hand sketches
- using appropriate hand tools and machines to remove and assemble aircraft structural components, parts, sections and skin, including riveting equipment, drilling equipment, aligning tools and material fasteners (grip pins)
- applying 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
- correctly supporting the aircraft structure by jacking, trestling and/or jiggling methods
- performing mensuration checks after structure reassembly.

It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure.

Evidence of transferability of skills and knowledge related to the major repair and modification of aircraft structure is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types. Ability to interpret repair/modification procedures and specifications and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads and aerodynamic requirements.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- aircraft construction principles and structural component attachment methods for primary structure:
 - fuselage
 - wings and attachment fittings
 - horizontal and vertical stabilisers and attachment fittings
 - pylons and attachment fittings
 - flight control surfaces
 - engine mounts and nacelles and attachment fittings
 - undercarriage attachments
- procedures for replacement of primary structure components, such as:
 - fuselage frames and longerons
 - wing spars or spar caps
 - wing-to-fuselage attachment fittings
 - tailplane attachment fittings
 - undercarriage attachment fittings
- aircraft mensuration checks – when required and methodology
- repair of integral fuel tanks and sealing of faying surfaces, including specific WHS and PPE requirements
- surface finishes and methods of restoration
- how to obtain MSDS
- relevant maintenance and structural repair manuals and modification data
- relevant regulatory requirements and standard procedures.

Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in maintenance documentation. It is also expected that general-purpose tools and test equipment found in most routine situations would be used where appropriate.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on tasks involving repairing by replacement or modifying major load-carrying structural members, such as skins, longerons, spars, frames and bulkheads.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).

- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>