



Australian Government

Assessment Requirements for MEA401 Inspect aircraft structures

Release: 2

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Modification History

Release 2. Equivalent to MEA401 Inspect aircraft structures with amended prerequisite codes.

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 all relevant WHS procedures, including the use of PPE and MSDS
- using approved maintenance documentation and aircraft publications relating to aircraft structure
- identifying various aircraft metals and their basic properties
- identifying potential causes of structural failure
- demonstrating appropriate cleaning procedures to enable structure inspection
- demonstrating correct inspection procedures, in particular pressurised aircraft, in accordance with aircraft and procedures manuals
- performing aircraft mensuration and alignment checks
- identifying damage to aircraft metallic (ferrous and non-ferrous) structures and/or components by way of:
 - impact
 - fatigue
 - corrosion
- identifying the various forms of structural corrosion, stating the causes and structural effects of corrosion on aircraft
- identifying composite materials used in aircraft construction, associated safety precautions and hazards
- inspecting damage and assessing composite components/structures for:
 - impact damage
 - fatigue.

The underlying skills inherent in this unit should be transferable across a range of structural inspections associated with aircraft maintenance. It is essential that the procedures take into account all aircraft and personal safety precautions relating to aircraft structure.

Evidence is required of the ability to interpret and apply aircraft structural inspection requirements. This may be demonstrated through application across a range of structural components and materials. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of the procedures should also clearly indicate knowledge of structural flight loads.

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
- structural component attachment methods
- describing the 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
- defining of structural terms, i.e. 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
- 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
- WHS procedures
- relevant PPE
- how to obtain MSDS.

Assessment Conditions

- Competency should be assessed in the workplace or simulated workplace 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 at least one (1) task from each of the following groups:
 - preparation for non-destructive testing (NDT) (access to relevant structural zones and components)

- inspection of:
 - 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
 - application of NDT techniques
 - doors, hinges and locking mechanisms for damage/misalignment
 - inspections applicable to each of safe life, damage tolerant and fail safe structure relevant to enterprise
 - ageing aircraft inspection programs.
- 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).

Links

Companion Volume implementation guides are found in VETNet -

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