



Australian Government

Assessment Requirements for MEAMEC0040 Maintain airframe systems of basic light fixed wing aircraft

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 MEA351 Maintain airframe systems of basic light fixed wing aircraft.

Performance Evidence

There must be evidence the candidate has completed all the tasks outlined in the elements and performance criteria of this unit, demonstrated the ability to:

- maintain at least one of each system:
 - flight control systems
 - fixed undercarriage shock absorbers
 - master or slave cylinder brake systems
 - fuel systems
 - cabin heating systems
- on at least one component from each of the following groups:
 - ailerons, elevators, rudders, trim tabs, flaps and slats
 - flight control wheels or sticks, cables, pulleys, guides, fairleads, bellcranks, rods, torque tubes, chains, sprockets, trim wheels or handles and rudder pedals or bars
 - fixed undercarriage hydraulic and rubber shock absorbers
 - wheels and brake units
 - brake master cylinders and rigid or flexible plumbing
 - rigid or flexible fuel tanks, selector or shutoff valves and rigid or flexible plumbing
 - cabin heater ducting and control valves.
- apply procedures, cleanliness requirements and safety precautions at all times and as relevant to the systems being maintained
- use hand skills, tools and test equipment to test, adjust and troubleshoot airframe systems and components, including airframe system component removal and installation
- remove, install and rig flight controls
- check flight control mass balance
- perform system functional tests and checks to isolate system faults and assess post-maintenance serviceability.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- work health and safety (WHS) precautions for airframe system maintenance, including the use of personal protective equipment (PPE) and material safety data sheets (MSDSs)
- standard trade practices for tool and test or rigging equipment usage and installation or securing of system components
- flight control system layout and operation
- theory of flight:
 - airflow
 - conditions of flight
 - lift and forces
 - drag
 - wings, tailplane and vertical stabiliser
 - lift augmentation (flaps, slats and slots)
 - aircraft control surfaces and their function (elevator, ailerons, rudder, elevons and trim tabs)
 - flight control balancing and flutter
 - stability and control and flight control rigging
- system layout and operation:
 - cockpit controls
 - cables and cable tensioning
 - pulleys and fairleads
 - bellcranks
 - levers
 - control surface horns
 - screwjacks
 - push or pull rods
- mechanical flight control system maintenance procedures and troubleshooting
- fixed undercarriage and shock absorber systems:
 - undercarriage configurations and types (tail wheel, tricycle and bicycle)
 - relative advantages of undercarriage configurations
 - steering systems
 - types of shock absorber (springs, leaf, coil, spring tube, rubber disc, bungee and oleo)
 - wheels and tyres
 - axles and wheel bearings
 - wheel spats
 - fixed undercarriage maintenance procedures and troubleshooting
- small aircraft brake systems:
 - types of brake system (mechanical and hydraulic)
 - master and slave cylinder hydraulic brake system operation
 - hydraulic fluids and seals
 - rigid and flexible plumbing

- brake pads and shoes
- brake discs and drums or linings
- brake system maintenance procedures and troubleshooting
- cabin heater system layout and operation:
 - heat source (muff heaters)
 - ducting for heating and demisting
 - valves and linkages
 - fan
 - cabin heating system maintenance procedures and troubleshooting
- fuel system layout and operation:
 - fuel tank types and location
 - selector valves and linkages
 - drain valves
 - rigid and flexible plumbing
 - fuel filters
 - boost pumps
- airframe system maintenance documentation including servicing schedules and maintenance manuals
- regulatory requirements and standard procedures relevant to airframe system maintenance.

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 maintaining airframe systems of basic light fixed wing aircraft. 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 maintaining airframe systems of basic light fixed wing aircraft
 - tools and equipment specified in the maintenance documentation
 - general- and special-purpose tools and test 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

Companion Volume implementation guides are found in VETNet –

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