



Australian Government

Assessment Requirements for MEA399 Lay out and set up aircraft systems

Release: 1

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Modification History

Release 1. Equivalent to MEA340 Lay out and set up aircraft systems. Revised as a result of changed prerequisites. Unit codes updated.

Performance Evidence

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

- lay out one typical aircraft mechanical system
- lay out one typical aircraft hydraulic system
- lay out one typical aircraft pneumatic system
- lay out one typical fuel storage and distribution system
- set up and operate one basic aircraft hydraulic system that includes:
 - hydraulic rig
 - manual selector valve
 - filter
 - accumulator
 - check valve
 - linear actuators
 - rigid and flexible plumbing
- apply required work health and safety (WHS) precautions, including using safety data sheets (SDS) and items of personal protective equipment (PPE) required for task.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- key characteristics of mechanical aircraft systems, their components as follows, and maintenance requirements:
 - cables
 - chains
 - sprockets
 - pulleys
 - fairleads
 - cable tensioners
 - gearboxes
 - screwjacks
 - rods

- universal joints
- constant velocity joints
- clutches
- bearings and bushes
- key characteristics of hydraulic aircraft systems, their components as follows, and maintenance requirements:
 - pumps
 - plumbing
 - manual and electrically operated valves
 - actuators
 - motors
 - check valves
 - direct reading and electrical pressure gauges
 - electrical control circuit micro switches
 - reservoirs
 - accumulators
 - filters
- key characteristics of pneumatic aircraft systems, their components as follows, and maintenance requirements:
 - precoolers
 - pressure regulator and shutoff valves
 - temperature modulating valve
 - check valves
 - over-pressure valves
 - temperature regulating valves
 - underloading valves
 - shuttle valves
 - back pressure valves
 - outflow valves
 - heat exchangers
 - moisture separators
 - chemical driers
 - filters
 - mechanical compressors
 - compressed air bottles
 - de-icing boots
 - ducting
- relative advantages and disadvantages of mechanical, hydraulic and pneumatic systems
- aircraft fuel storage and distribution systems and their components, including:
 - integral fuel cells

- rigid and flexible fuel cells
- external fuel tanks
- rigid and flexible plumbing and couplings
- manifolds
- selector valves
- anti-surge valves
- anti-gravity valves
- fuel quantity indication
- fuel flow indication
- boost pumps
- transfer pumps
- filters
- strainers
- fuel heaters
- fluid power principles
- plumbing identification marking
- hydraulic fluid types, characteristics and handling precautions
- aircraft fuels, their characteristics and handling precautions
- WHS precautions relating to aircraft systems and their operation, including procedures for using SDS and items of PPE.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (Australian Defence Force [ADF] and Civil Aviation Safety Authority [CASA]) and maintenance stakeholders, and must be rigorously observed.

This unit may be assessed off the job in a training environment equipped to provide exposure to the range of system types and provide for the layout, set-up and operation of basic hydraulic systems.

The candidate must be permitted to refer to relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals, and reference materials.

The candidate must have access to:

- tools, equipment, materials, and relevant documentation required to demonstrate the performance evidence above.

Assessors must gather a range of evidence through a variety of ways including direct observation, teacher's reports, project work, samples and questioning.

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Where the unit is to be used for CASA licensing purposes the assessor must also meet the criteria specified in the Civil Aviation Safety Regulation (CASR) Part 147 Manual of Standards.

Links

Companion Volume implementation guides are found in VETNet -

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