



Australian Government

Assessment Requirements for MEAAVI0044 Maintain basic light aircraft electrical systems and components

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 MEA274 Maintain basic light aircraft electrical systems and components.

Performance Evidence

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

- maintain basic light aircraft electrical systems and components during scheduled or unscheduled maintenance activity to meet requirements on electrical looms, cables and connection hardware, and on each of the following systems and on at least one major component/line replaceable unit (LRU) in each case:
 - direct current (DC) power generation, regulation and distribution systems
 - piston engine and gas turbine engine ignition and starting systems (gas turbine may be omitted where not applicable to the enterprise)
 - DC electrical systems, such as flaps, including related motors and actuators
 - aircraft lighting
 - aircraft main battery (competency may be demonstrated through the performance of a battery check).
- perform component removal and installation on at least one component from each of the following:
 - DC generators, and alternator or rectifier generators, and components of related single generator regulation and distribution systems
 - motors
 - actuators
 - piston engine and gas turbine engine ignition and starting system components (gas turbine may be omitted where not applicable to the enterprise)
 - aircraft batteries
 - aircraft lighting components such as bulbs, lenses, switches and rheostats
- correctly connect DC generators, alternator or rectifier generators and starter/generators during the above maintenance activities
- recognise system and component defects or external damage, correct installation, connection of plugs, terminations, attaching hardware (including cabling or harnesses) and security in each of:
 - DC power generation systems including regulation, distribution and control
 - battery installations

- piston engine ignition and starting systems
- gas turbine engine ignition and starting systems (where applicable to the enterprise)
- internal/external lighting systems, including controls
- motors and actuators in basic DC electrical systems
- perform functional testing by applying logic processes, taking and interpreting electrical measurements, using test equipment and appropriate wiring diagrams and manuals to isolate malfunctions faults in the listed systems and assess post-maintenance serviceability
- apply testing procedures, cleanliness requirements and safety precautions at all times, and as relevant to the system/s being maintained.

Knowledge Evidence

- component attachment methods
- connection of hardware and plugs
- DC electrical principles, including:
 - properties of permanent magnets
 - precautions for the care and storage of permanent magnets
 - properties of electromagnets
 - primary and secondary cells
 - aircraft battery types, construction, care and safety
 - resistor characteristics
 - fuses and circuit breakers
 - fundamental DC circuits
 - inductive circuits
 - capacitive circuits
 - basic fault-finding principles
- general construction, operating characteristics and applications for aircraft, including:
 - DC generators
 - alternator/rectifier generators
 - DC motors including starter motors
 - starter/generators
 - DC actuators (linear and rotary)
 - gas turbine high energy ignition system components and related safety precautions
 - lighting systems
- how to locate and identify components of:
 - DC power generation, regulation, distribution and control systems and components, including:
 - generators and starter/generators
 - regulators
 - bus bars
 - circuit breakers and fuses

- wiring
- piston engine ignition and starting systems and components, including
 - magnetos or coils
 - starter motors
 - ignition switches/start switches
 - ignition harnesses
 - low tension wiring
 - spark plugs
 - auxiliary starting devices
- gas turbine engine ignition and starting systems (where applicable to the enterprise), including:
 - starter motors and starter/generators
 - high energy ignition units
 - control units
 - switches
- batteries and associated mounting equipment, including related anti-vibration aids
- motors and actuators in basic DC electrical systems
- the basic layout (block diagram level), function and operation of the systems listed above
- electrical system maintenance requirements and troubleshooting procedures
- work health and safety (WHS) practices for basic light aircraft electrical systems and components, including those relating to gas turbine engine high energy ignition units
- maintenance manuals for basic light aircraft electrical systems and components
- relevant regulatory requirements and standard procedures.
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Assessment Conditions

The following conditions of assessment represent the requirements of the regulators (DASA and 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 basic light aircraft electrical system components. 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 basic light aircraft electrical system components
 - tools and equipment specified in maintenance documentation
 - general-purpose tools and test equipment found in most routine situations and required for maintaining basic light aircraft systems and components.

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