Australian Government

Assessment Requirements for MEA362 Maintain aircraft vapour cycle air conditioning systems

Release: 1

Assessment Requirements for MEA362 Maintain aircraft vapour cycle air conditioning systems

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 procedures, including the selection and use of applicable PPE and MSDS
- complying with regulatory requirements regarding the de-gassing of vapour cycle air conditioning systems
- using relevant maintenance documentation and aircraft manuals
- recognising external and internal signs of defects in vapour cycle air conditioning systems and system components through visual/physical inspection
- testing of vapour cycle air conditioning system operation, be able to operate systems and leak testing equipment, monitor indications and recognise correct function
- using specialist equipment to evacuate and recharge refrigerant
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in vapour cycle air conditioning systems, clearly recording details and identifying the required rectification actions
- correctly removing and installing vapour cycle air conditioning system electrical and mechanical components.

The underlying skills inherent in this unit should be transferable across a range of inspection, testing, troubleshooting and removal and installation tasks (including the timely involvement of supervisor or other trades) associated with vapour cycle air conditioning systems and components. It is essential that system testing procedures take into account all safety precautions associated with vapour cycle air conditioning system operation and testing, and that regulations relating to the evacuation and recharging of refrigerant be strictly observed. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

This shall be demonstrated through application across a number of aircraft vapour cycle air conditioning systems.

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:

- WHS procedures associated with vapour cycle air conditioning system maintenance, including the selection and use of PPE

- how to obtain applicable MSDS
- regulations applying to the evacuation and recharging of refrigerant
- fault diagnosis techniques
- vapour cycle air conditioning system layout and operation
- vapour cycle air conditioning system electrical and mechanical component operation:
  - compressor
  - condenser
  - receiver dryer
  - thermal expansion valve
  - evaporator
  - magnetic clutch and drive system:
    - belt
    - power takeoff
    - electric motor
    - hydraulic motor
    - pneumatic
  - condenser extension and retraction system
  - blower
  - throttle system shutoff
  - temperature control system
- refrigerant used in aircraft vapour cycle air conditioning systems
- lubricants used in compressors
- equipment used to test systems and evacuate and recharge refrigerant
- procedures for evacuating and recharging system refrigerant
- refrigerant leak testing techniques and equipment
- removal and installation procedures for vapour cycle air conditioning system components
- vapour cycle air conditioning system maintenance requirements
- relevant maintenance manuals
- 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 application of testing procedures and functional checks should indicate knowledge of system operation and regulations relating to refrigerant. Vapour cycle air conditioning system operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to carry out engine control system checks and troubleshoot the system within the limits of the aircraft/system fault-finding guide before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- 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 a system and at least one (1) component in each of the following groups:
  - refrigeration system compressor, condenser, receiver dryer, thermal expansion valve and evaporator
  - magnetic clutch and drive system (belt, power takeoff, electric motor, hydraulic motor or pneumatic as applicable)
  - condenser extension and retraction system
  - blower
  - throttle system shutoff
  - temperature control system.
- 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.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371