



Australian Government

**Assessment Requirements for MEA316
Inspect, test and troubleshoot rotary wing
rotor and control systems and components**

Release: 1

Assessment Requirements for MEA316 Inspect, test and troubleshoot rotary wing rotor and control systems and components

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
- using relevant maintenance documentation and aircraft manuals to:
 - recognise through visual/physical inspection external signs of defects in the rotor, rotor head, tail rotor and flight control mechanical system components
 - ground test the rotor and control system and recognise correct function
 - rig and adjust rotor controls and systems
- using fault diagnosis guides and equivalent data to accurately and efficiently troubleshoot the causes of unserviceabilities in rotor control systems, clearly record details and identify the required rectification actions.

The underlying skills inherent in this unit should be transferable across a range of inspection, testing and troubleshooting applications (including the timely involvement of supervisors or other trades) associated with the rotor control systems. It is essential that testing procedures take into account all safety precautions associated with ground testing of rotor and rotor control systems, and that awareness be demonstrated of dual inspection requirements associated with work on control systems.

Ability to interpret system performance specifications (allowable limits) and apply them in practice is critical and shall be demonstrated through application across the range of systems listed in the Assessment Conditions.

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:

- fault diagnosis techniques
- standard trade practices relating to tool and test/rigging equipment usage
- theory of flight:
 - airflow
 - conditions of flight
 - lift and forces

- drag
- rotary flight principles:
 - terminology relating to:
 - aerofoils
 - main rotor blades
 - rotor discs
 - rotors – main and tail
 - aerodynamic characteristics:
 - aerofoil design
 - forces
 - rotor thrust and power requirements
 - vortex ring
 - autorotation
 - helicopter stability
- helicopter dynamic components:
 - main rotors:
 - blades
 - heads
 - linkages
 - tail rotors
 - swash plates
 - transmissions and drive shafts
 - clutches and freewheeling units
- system and component operation, including electrical and instrument system interfaces:
 - cyclic pitch control
 - collective pitch control
 - tail rotor control
 - mechanical and powered control systems
 - engine control interface
 - torque reaction and anti-torque devices
 - engine indication
 - vibration monitoring
- helicopter maintenance procedures and troubleshooting
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures including requirements for engine and rotor system operation
- relevant WHS practices.

Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment, using tools and equipment specified in aircraft maintenance manuals. It is also expected that applicable general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
- The application of ground testing procedures should clearly indicate knowledge of system operation. System operation knowledge, the relationship of individual components and the links with other systems will be necessary to supplement evidence of ability to 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.
- Functional testing of rotors and rotor control systems with engine/s running may be carried out with the applicant directing a pilot qualified on type.
- 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) item from each of the following groups:
 - main rotor blades and tail rotor blades
 - rotor heads, swash plates and tail rotor pitch control assemblies
 - mechanical, powered flight control components
 - main rotor, intermediate or tail rotor gearboxes
 - drive shafts and couplings.
- 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.
- Individuals being assessed who have already attained MEA352 Maintain basic rotary wing aircraft systems will have satisfied the requirements of this unit with regard to common Range of Conditions variables. The Log of Industrial Experience and Achievement records relating to MEA352 Maintain basic rotary wing aircraft systems may be accepted as also meeting the evidence requirements for this unit in the applicable common areas.

Links

Companion Volume implementation guides are found in VETNet -

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