



Australian Government

MEA308 Remove and install rotary wing rotor and flight control system components

Release: 2

MEA308 Remove and install rotary wing rotor and flight control system components

Modification History

Release 2. Equivalent to MEA308 Remove and install rotary wing rotor and flight control system components with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and the use of maintenance publications to remove and install rotary wing aircraft rotors and associated flight control system components during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

The unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA398	Remove and install aircraft hydro-mechanical and landing gear system components
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Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|-----------------------------|--|
| 1. Remove rotary wing rotor | 1.1 System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance |
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- regulations/orders and standards and practices
- 1.2 Isolation and warning signs are installed/fitted to ensure personnel safety
 - 1.3 Rotary wing rotor removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices while observing all relevant work health and safety (WHS) requirements
 - 1.4 Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures
 - 1.5 Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
2. Remove rotary wing flight control system components
- 2.1 System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
 - 2.2 Isolation and warning signs are installed/fitted to ensure personnel safety
 - 2.3 Rotary wing flight control system component removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices while observing all relevant WHS requirements
 - 2.4 Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures
 - 2.5 Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practice
3. Install rotary wing rotor
- 3.1 Rotor to be installed is checked to confirm correct part or model numbers, modification status and serviceability
 - 3.2 Mass balance of rotor blades/head is checked in accordance with relevant aircraft publications/maintenance regulations/orders and

		standards and practices
	3.3	Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices while observing all relevant WHS requirements
	3.4	Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage
4.	Install rotary wing flight control system components	
	4.1	Rotary wing flight control system components to be installed are checked to confirm correct part or model numbers, modification status and serviceability
	4.2	Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices while observing all relevant WHS requirements
	4.3	Support/safety equipment is removed at the appropriate time to ensure personnel safety and freedom from structural damage
	4.4	Required aircraft maintenance documentation is completed and processed in accordance with standard enterprise procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Rotary wing rotors and flight control system components include:

- Main rotor blades and tail rotor blades
- Rotor heads
- Swash plates, and tail rotor pitch control assemblies
- Mechanical flight control components (i.e. cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, control sticks or columns,

	tail rotor pedals) and mechanical components of powered flight control systems
Powered flight controls	• Main rotor, intermediate or tail rotor gearboxes • Drive shafts and couplings • In the case of hydraulically powered rotor control system components and related plumbing, maintenance work should be assessed against MEA398 Remove and install aircraft hydro-mechanical and landing gear system components
Procedures and requirements include:	• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2. Equivalent to MEA308 Remove and install rotary wing rotor and flight control system components

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEA308 Remove and install rotary wing rotor and flight control system components

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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 practices, including lifting and handling heavy components
- using relevant maintenance documentation and aircraft manuals to:
 - correctly remove and install main rotors and rotor heads
 - check the mass balance of rotor blades and heads
 - correctly remove and install tail rotor blades and pitch control assemblies
 - locate and correctly remove and install mechanical flight control system components
 - locate and correctly remove and install drive train components, such as gearboxes and drive shafts and couplings
 - identify the requirements for component balancing
- identifying the requirements for adjustment and rigging of systems after component removal and installation.

It is essential that safety precautions applicable to the rotary wing rotor and flight control system components being maintained, including allowance for the effect on weight and balance (i.e. centre of gravity) when heavy components are removed, are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through removal and installation of a representative range of the rotary wing rotor and flight control system components as 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:

- component attachment methods
- removal and installation procedures for:
 - main rotors and rotor blades
 - rotor heads
 - tail rotors and tail rotor blades

- swash plates
- tail rotor pitch control assemblies
- requirements for the checking and adjustment of blade tracking after rotor maintenance
- control system layout, linkages and operation (operation only to the extent necessary for the specified tasks), including the requirement for rigging and the independent inspection of work performed
- power train layout and assembly:
 - main rotor gearboxes
 - intermediate gearboxes
 - tail rotor gearboxes
 - drive shafts
 - couplings
- relevant WHS practices, including those relating to lifting and handling of heavy items
- 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 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
- An understanding of component attachment methods, the need for adjustment or rigging and system operation as it relates to the work must be demonstrated 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 at least one (1) item from each of the following groups:
 - main rotor blades and tail rotor blades
 - rotor heads
 - swash plates, tail rotor pitch control assemblies
 - mechanical flight control components (i.e. cables, pulleys, guides, fairleads, tension regulators, control rods, bellcranks, torque tubes, control sticks or columns, tail rotor pedals) and mechanical components of powered flight control systems
 - 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 Statement 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.

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