



Australian Government

Department of Education, Employment and Workplace Relations

MEA308C Remove and install rotary wing rotor and flight control system components

Release: 2

MEA308C Remove and install rotary wing rotor and flight control system components

Modification History

Minor formatting and editorial changes made. Additional assessment advice provided in the Evidence Guide.

Unit Descriptor

This unit of competency is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway. It covers the competencies required for the removal and installation of rotary wing aircraft rotors and flight control system components. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.

Application of the Unit

This unit requires application of hand skills and the use of maintenance publications to remove and install rotors and associated flight control system components. Applications include rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA302C	Remove and install aircraft hydro-mechanical and landing gear system components
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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

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| 1. Remove rotary wing rotor | <p>1.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>1.2. Isolation and warning signs are installed/fitted to ensure personnel safety</p> <p>1.3. Rotary wing rotor removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>1.4. Required aircraft maintenance documentation is completed and processed in standard enterprise procedures</p> <p>1.5. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> |
| 2. Remove rotary wing flight control system components | <p>2.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>2.2. Isolation and warning signs are installed/fitted to ensure personnel safety</p> <p>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</p> <p>2.4. Required aircraft maintenance documentation is completed and processed in standard enterprise procedures</p> <p>2.5. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> |
| 3. Install rotary wing rotor | <p>3.1. Rotor to be installed is checked to confirm correct part or model numbers, modification status and serviceability</p> <p>3.2. Mass balance of rotor blades/head is checked in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>3.3. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>3.4. Support/safety equipment is removed at the appropriate time to ensure personnel freedom from structural damage</p> |
| 4. Install rotary wing flight control system components | <p>4.1. Rotary wing flight control system components to be installed are checked to confirm correct part or model numbers, modification status and serviceability</p> <p>4.2. Installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices</p> <p>4.3. Support/safety equipment is removed at the appropriate time to ensure personnel freedom from structural damage</p> <p>4.4. Required aircraft maintenance documentation is completed and processed in standard enterprise procedures</p> |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS 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

Required knowledge

Look for evidence that confirms 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 OHS practices, including those relating to lifting and handling of heavy items
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install rotary wing aircraft rotors and flight control system components while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable into other units that require similar techniques. 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. cg) 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. 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. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on at least one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.
Context of and specific resources for assessment	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 general purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.

Method of assessment	
Guidance information for assessment	Individuals being assessed who have already attained MEA352A Maintain basic rotary wing aircraft systems, will have satisfied the requirements of this unit with regard to common Range Statement variables. Log of Industrial Experience and Achievement records relating to MEA352A Maintain basic rotary wing aircraft systems, may be accepted as also meeting the evidence requirements for this unit in the applicable common areas.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Note	Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide
Rotary wing rotors and flight control system components	Rotary wing rotors and flight control system components may include: 1. Main rotor blades and tail rotor blades 2. Rotor heads 3. Swash plates, tail rotor pitch control assemblies 4. 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 5. Main rotor, intermediate or tail rotor gearboxes 6. Drive shafts, couplings
Powered flight controls	In the case of hydraulically powered rotor control system components and related plumbing, maintenance work should be assessed against MEA302C Remove and install aircraft hydro-mechanical and landing gear system components
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance activities • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Aviation maintenance

Competency field

Co-requisite units

Not applicable