Australian Government

MEA390A Repair and/or overhaul rotary wing dynamic components

Revision Number: 2

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

MEA390A Repair and/or overhaul rotary wing dynamic components

Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated. Missing knowledge requirements reinstated.

Unit Descriptor

This unit of competency is part of the Mechanical Certificate IV (Component Workshop Maintenance Stream) training pathway. It covers the competencies required to overhaul and repair rotary wing aircraft rotor assembly components, transmissions and drive shafts. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Application of the Unit

This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul rotary wing dynamic components.

Applications include rotor assemblies and components, transmissions, drive shafts and couplings from piston and turbine engine rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

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.

Elements and Performance Criteria

1. Determine requirements	1.1. ***Rotary wing component*** defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers
	1.2. Components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required
	1.3. Modification status is clearly established to assist in determining the overhaul requirements for the components
	1.4. Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures
2. Troubleshoot rotary wing components	2.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination
	2.2. Logical processes are used to ensure efficient and accurate troubleshooting
	2.3. Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement
	2.4. Rotary wing component faults are located and the causes of the faults are clearly identified
	2.5. Fault rectification requirements are determined to assist in planning the repair
3. Dismantle and inspect rotary wing component parts	3.1. Rotary wing component parts are dismantled in accordance with maintenance manuals
	3.2. Component parts are assessed for serviceability in accordance with the relevant maintenance documentation
	3.3. Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures
	3.4. Parts requiring non-destructive testing are prepared for testing in accordance with the relevant maintenance documentation
	3.5. Parts lists are compiled and processed in accordance with standard enterprise procedures
4. Repair and/or modify rotary wing components or parts	4.1. Rotary wing component parts are ***repaired*** or replaced in accordance with the relevant maintenance documentation
	4.2. Modification of components or parts is undertaken, where required, by relevant manufacturers' bulletins or procedures

5. Assemble, test and adjust rotary wing components	5.1. Component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents 5.2. Rotary wing components are adjusted, tested or calibrated to operate within prescribed specifications 5.3. Finished components are tagged, sealed and packaged in accordance with standard enterprise procedures 5.4. Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise procedures

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS procedures, including the use of MSDS and PPE
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
  - recognise state of serviceability and overhaul or repair requirements for rotary wing components as listed in the Range Statement
  - test and accurately and efficiently troubleshoot unserviceabilities and document the causes in rotary wing components
  - dismantle and inspect rotary wing component parts for serviceability and identify repair requirements as applicable
  - repair/replace/modify rotary wing component parts
  - assemble, balance as required, test for correct operation and adjust rotary wing components
- correctly tagging, sealing and packaging completed components

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the use of applicable items of PPE
- OHS procedures
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes

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 component theory knowledge and use maintenance publications to repair and overhaul rotary wing dynamic 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 across a range of repair and/or overhaul applications associated with aircraft components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are achieved. This may be demonstrated through application across a number of different aircraft components. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. The application of testing procedures should also clearly indicate knowledge of system operation. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults 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 3 in the Range Statement and on a representative range of the repair tasks in Groups 4 to 9. 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 maintenance documentation.

	It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	
Guidance information for assessment	

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 components	Rotary wing components may include: 1. Rotor blades 2. Rotor heads, hinge assemblies and swashplates 3. Transmission gear boxes, drive shafts and couplings
Repair of component parts	Repair of component parts may include: 4. Finishing or re-finishing of metal surfaces through processes, such as polishing, lapping and blending of damage within maintenance manual limits 5. Removal of corrosion within maintenance manual limits 6. Replacement of seals and gaskets 7. Replacement of bearings 8. Application of surface treatments, such as alodining 9. Restoration of paint finishes
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex testing and adjusting of components, and where this is undertaken, may be carried out under supervision at the appropriate level
Procedures and requirements	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