Australian Government

Department of Education, Employment and Workplace Relations

MEA307C Remove and install propeller systems and components

Revision Number: 2

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Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated.

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 fixed wing aircraft propellers and propeller 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 propellers and propeller system components

Applications include propeller-driven fixed 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. Remove propellers and components	1.1. System is rendered safe and prepared in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
	1.2. Isolation and warning signs are installed/fitted to ensure personnel safety and freedom from damage during component removal
	1.3. ***Propeller system component*** removal is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
	1.4. Required aircraft maintenance documentation is accurately completed and correctly processed
	1.5. Removed components are labelled, sealed and packaged in accordance with relevant aircraft publications/ maintenance regulations/orders and standards and practices
2. Install propellers and components	2.1. Propeller system components to be installed are checked to confirm correct part numbers, serviceability and modification status
	2.2. Component installation is carried out in accordance with relevant aircraft publications/maintenance regulations/orders and standards and practices
	2.3. Support/safety equipment is removed at an appropriate time to ensure personnel safety and freedom from structural damage
	2.4. Required aircraft maintenance documentation is 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 practices, including lifting and handling heavy components
- using MSDS and PPE
- using relevant maintenance documentation and aircraft manuals to:
  - correctly remove and install propellers and related components such as spinners
  - locate and correctly remove and install pitch control system components
  - locate and correctly remove and install propeller de-icing system components
- identifying requirements for adjustment and rigging of systems and controls

Required knowledge

Look for evidence that confirms knowledge of:

- propeller attachment methods and removal and installation procedures
- propeller system component attachment methods for:
  - spinners
  - governors
  - beta control systems
  - de-ice and anti-ice systems
- controls and control linkages, including the requirement for rigging and for independent inspection of work performed
- electrical circuit isolation, plug removal and installation
- 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 propellers and propeller system components on propeller-driven fixed wing aircraft 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 shoring, trestling and lifting requirements and safety precautions applicable to propeller system maintenance are fully observed, understood and complied with, and that an awareness is demonstrated of dual inspection requirements. Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a representative range of propeller 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 4 in the Range Statement (Group 5 may be omitted where it is not applicable to the enterprise). 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	

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
Propeller system components	Propeller system components may include: 1. Propellers, including spinners, where fitted 2. Constant speed, feathering and reversing propeller drives 3. Beta control systems and governors 4. Controls and linkages 5. De-ice/anti-ice equipment
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