Australian Government

Department of Education, Employment and Workplace Relations

MEA383A Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules

Release: 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 (Component Workshop Maintenance Stream) training pathway. It covers the competencies required to overhaul and repair components of gas turbine engine or engine module air inlet and compressor sections.

Application of the Unit

This unit requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft gas turbine air inlet and compressor components in workshops.
Applications include air inlet and compressor components from turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

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. Component defect reports (removal tags) or customer order are correctly ir matched by part and serial numbers 1.2. ***Air inlet and compressor components*** are inspected and/or operated throug procedures to establish serviceability and confirm defects, if necessary 1.3. Modification status is clearly established to assist in determining the overh for the components 1.4. Extent of overhaul or repair is identified and documented in accordance wi enterprise procedures
2. Troubleshoot air inlet and compressor components	2.1. Available information from maintenance records and test results is used, w 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 rectification requirement 2.4. Air inlet and compressor component faults are located and the causes of th identified 2.5. Fault rectification requirements are determined to assist in planning the rep
3. Dismantle and inspect air inlet and compressor parts	3.1. Air inlet and compressor component parts are dismantled in accordance wi manual 3.2. Component parts are assessed for serviceability in accordance with the rele documentation 3.3. Parts requiring specialist repair are tagged and repair instructions are speci with standard enterprise procedures 3.4. Parts requiring non-destructive testing are prepared for testing in accordanc relevant maintenance documentation 3.5. Parts lists are compiled and processed in accordance with standard enterpri
4. Repair and/or modify air inlet and compressor components or parts	4.1. Component parts are ***repaired*** or replaced in accordance with the relevant documentation 4.2. Modification of components is undertaken, where required, by reference to manufacturers' bulletins or procedures and/or customer requirements
5. Assemble and adjust air inlet and compressor components	5.1. Air inlet and compressor component parts are assembled within specified t accordance with the appropriate maintenance documents 5.2. Support/safety equipment, where fitted, is removed at the appropriate time 5.3. Components are adjusted to ensure that fits and clearances are within presc specifications 5.4. Finished components are tagged, sealed and packaged in accordance with s 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 air inlet and compressor components
  - test and accurately and efficiently troubleshoot unserviceabilities and document the causes in air inlet and compressor components
  - dismantle and inspect air inlet and compressor component parts for serviceability and identify repair requirements as applicable
  - repair/replace/modify air inlet and compressor component parts
  - assemble and adjust air inlet and compressor 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
- fault diagnosis techniques
- system and component operation
- repair and overhaul procedures and processes, including inspection, rework, repair and reclamation, assembly, balancing of rotating assemblies and final adjustment

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 air inlet and compressor components from aircraft gas turbine engines and/or modules 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 gas turbine engine components and/or modules. It is essential that the maintenance procedures (including the use of correct fuels and lubricants) are interpreted and applied to ensure quality and safety standards are achieved. Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a number of different gas turbine engine components and/or modules. Ability to assess component/module 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 5 listed in the Range Statement (Groups 2 and 5 may be omitted if not applicable to the enterprise), including demonstration of the repair processes listed in Groups 6 to 11. 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
Air inlet and compressor components	Air inlet and compressor components from fixed or rotary wing gas turbine engines (turbo-jet, turbofan, turboshaft, turboprop) or engine modules, or auxiliary power units and may include: 1. Air inlet structure and blow-in doors where these items are part of an engine change unit or engine module 2. Fan, where applicable 3. Inlet guide vanes 4. Centrifugal or axial flow compressor assemblies (low and high pressure) 5. Compressor bleed valves, where applicable
Repair of component parts	Repair of component parts may include: 6. Finishing or re-finishing of metal surfaces through processes, such as polishing, lapping and blending of damage within maintenance manual limits 7. Removal of corrosion within maintenance manual limits 8. Replacement of seals and gaskets 9. Replacement of bearings 10. Application of surface treatments, such as alodining 11. 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