Australian Government

Department of Education, Employment and Workplace Relations

MEA387A Test gas turbine engines and engine modules after overhaul or repair

Revision Number: 2

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Modification History

Minor formatting and editorial changes made.

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 test run gas turbine engines or engine modules after overhaul or repair. 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 test run aircraft gas turbine engines and engine modules in engine test stands following overhaul or repair in workshops.
Applications include turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA383A	Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules
MEA384A	Repair and/or overhaul gas turbine engine combustion section components and/or modules
MEA385A	Repair and/or overhaul gas turbine engine turbine and exhaust section components
MEA386A	Repair and/or overhaul gas turbine engine ancillary section components

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. Prepare engine or module for testing	1.1. Maintenance documentation is checked to confirm that ***engine*** or ***module*** is 1.2. Where required, engine modules are assembled into a test engine 1.3. Engine is configured for testing in accordance with maintenance manual re standard enterprise procedures
2. Install engine in test stand	2.1. Engine is installed in test stand in accordance with maintenance manual req standard enterprise procedures 2.2. Fuel, oil and fluid levels are checked 2.3. Engine test stand is prepared for operation
3. Run and test engine or module performance	3.1. Engine is started and operating parameters are checked 3.2. Engine performance is tested and trimmed, where applicable, in accordance manual requirements and standard enterprise procedures 3.3. Engine operating parameters and test results are recorded in accordance wit enterprise procedures
4. Remove engine from test stand	4.1. Engine is removed from test stand in accordance with maintenance manual standard enterprise procedures 4.2. Serviceable engines or modules are configured, inhibited and prepared in ac maintenance manual requirements and standard enterprise procedures for tra 4.3. Unserviceable engines or modules are returned to workshop in accordance enterprise procedures for rectification or rework

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying relevant OHS procedures
- using relevant MSDS and items of PPE
- using relevant maintenance manuals and standard enterprise procedures to:
  - prepare engines or modules for test running
  - install engines in test stands
  - test run and trim engines where applicable
  - record engine operating parameters
  - remove engines from the test stand
  - complete documentation
- configure and inhibit serviceable engines and modules for transport or storage

Required knowledge

Look for evidence that confirms knowledge of:

- how to obtain relevant MSDS
- the use of applicable items of PPE
- test stand operation
- engine and module test requirements
- engine operating parameters and adjustment methods

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 gas turbine engine theory knowledge and use maintenance publications to test and adjust the operation of overhauled engines 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 engines 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 gas turbine engine and/or module test runs. Capability to interpret test 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 engine or module 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 a representative range of engine/module test runs. 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 in an applicable engine test stand. 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.	
Engines	Engines include: • fixed or rotary wing gas turbine engine (turbo-jet, turbofan, turboshaft, turboprop), or auxiliary power unit
Modules	Modules may include: • various combinations of gas turbine engine sections as determined by the manufacturer
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities • complex adjusting and testing of engine performance to be carried out under supervision
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