



Australian Government

MEA387 Test gas turbine engines and engine modules after overhaul or repair

Release: 1

MEA387 Test gas turbine engines and engine modules after overhaul or repair

Modification History

Release 1 - New unit of competency

Application

This unit of competency 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 during the performance of scheduled or unscheduled maintenance. Testing may be performed individually or as part of a team.

Applications include turbo-jet, turbofan, turboshaft, turboprop engines and engine modules, or auxiliary power units.

The unit is part of the Mechanical Certificate IV (Component Workshop Maintenance Stream) training pathway. It is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Pre-requisite Unit

MEA383	Repair and/or overhaul gas turbine engine air inlet and compressor components and/or modules
MEA384	Repair and/or overhaul gas turbine engine combustion section components and/or modules
MEA385	Repair and/or overhaul gas turbine engine turbine and exhaust section components
MEA386	Repair and/or overhaul gas turbine engine ancillary section components

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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| 1. | Prepare engine or module for testing | 1.1 | Maintenance documentation is checked to confirm that engine or module is ready for testing |
| | | 1.2 | Where required, engine modules are assembled into a test engine |
| | | 1.3 | Engine is configured for testing in accordance with maintenance manual requirements and standard enterprise procedures |
| 2. | Install engine in test stand | 2.1 | Engine is installed in test stand in accordance with maintenance manual requirements and standard enterprise procedures while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE) |
| | | 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 with maintenance manual requirements and standard enterprise procedures |
| | | 3.3 | Engine operating parameters and test results are recorded in accordance with standard enterprise procedures |
| 4. | Remove engine from test stand | 4.1 | Engine is removed from test stand in accordance with maintenance manual requirements and standard enterprise procedures while observing all relevant WHS requirements, including the use of MSDS and items of PPE |
| | | 4.2 | Serviceable engines or modules are configured, inhibited and prepared in accordance with maintenance manual requirements and standard enterprise procedures for transport or storage |

- 4.3 Unserviceable engines or modules are returned to workshop in accordance with standard enterprise procedures for rectification or rework

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

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| Engines include: | <ul style="list-style-type: none">• Fixed or rotary wing gas turbine engine (turbo-jet, turbofan, turboshaft, turboprop), or auxiliary power unit |
| Modules include: | <ul style="list-style-type: none">• Various combinations of gas turbine engine sections as determined by the manufacturer |
| Adjustment and testing includes: | <ul style="list-style-type: none">• Complex adjusting and testing of engine performance to be carried out under supervision |
| Procedures and requirements include: | <ul style="list-style-type: none">• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise |

Unit Mapping Information

Release 1 – equivalent to MEA387A Test gas turbine engines and engine modules after overhaul or repair

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA387 Test gas turbine engines and engine modules after overhaul or repair

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS 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
- configuring and inhibiting serviceable engines and modules for transport or storage.

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.

This shall 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.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

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

Assessment Conditions

- Competency should be assessed in the work environment or simulated 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.
- The application of testing procedures should 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.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on a range of engine/module test runs that are representative of the testing performed within 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 (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

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