



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEA366A Perform borescope inspections**

**Revision Number: 2**

## **MEA366A Perform borescope inspections**

### **Modification History**

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

### **Unit Descriptor**

This unit of competency is required for the grant of approval for Aircraft Maintenance Engineers to perform borescope inspections on aircraft system components and engines. It covers the elements of competency required to set up and use borescopes to perform remote visual inspections required by applicable maintenance data. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

### **Application of the Unit**

This unit is applied, in conjunction with units relating to the inspection, testing and troubleshooting of applicable aircraft engines, to perform and assess the results of remote visual inspections using borescopes.

Applications include piston engines and gas turbine engines either installed in aircraft or in workshops.

### **Licensing/Regulatory Information**

Not applicable.

## Pre-Requisites

MEA313C Inspect, test and troubleshoot piston engine systems and components

OR

MEA314C Inspect, test and troubleshoot gas turbine engine systems and components

OR

MEA322C Test and troubleshoot gas turbine engine systems and components

OR

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

OR

MEA388A Repair and/or overhaul piston engines

## Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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## Elements and Performance Criteria

1. Set up borescope equipment
  - 1.1. Applicable *borescope equipment* is obtained and assembled for use
  - 1.2. Assembled borescope equipment is tested for correct operation
2. Perform borescope inspection
  - 2.1. Component or engine is prepared for safe borescope inspection in accordance with *applicable maintenance data*
  - 2.2. Borescope inspections are performed in accordance with applicable maintenance data or standard operating procedures
3. Record and assess borescope inspection results
  - 3.1. Borescope inspection results are recorded and processed in accordance with standard enterprise procedures for the applicable borescope equipment
  - 3.2. Identified defects are recorded and reported in accordance with standard enterprise procedures
4. Maintain and re-pack borescope equipment for storage
  - 4.1. Borescope equipment is disassembled, maintained and cleaned in accordance with manufacturer's instructions
  - 4.2. Borescope equipment is replaced in transport or storage containers and stored in accordance with standard enterprise procedures

## **Required Skills and Knowledge**

### **Required skills**

Look for evidence that confirms skills in:

- selecting applicable borescope equipment and assembling it for use
- identifying required borescope inspections and required techniques using applicable maintenance data
- setting up the applicable system component or engine in accordance with applicable maintenance data for safe borescope inspection
- applying borescope inspection techniques to safely perform required inspections without damage to engine components
- identifying and correctly assessing and reporting/recording defect indications
- maintaining and correctly storing borescope equipment after use

### **Required knowledge**

Look for evidence that confirms knowledge of:

- types of borescope and their applications
- how to assemble borescope equipment and prepare it for use
- use of associated imaging and recording equipment, such as video and digital camera
- use of maintenance data to identify borescope inspection requirements
- borescope inspection techniques and safety
- remote engine rotation equipment
- defect assessment techniques
- borescope inspection reporting and recording requirements
- borescope maintenance and storage requirements

## 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.

<p><b>Overview of assessment</b></p>	<p>A person who demonstrates competency in this unit must be able to apply hand skills, use maintenance publications and apply borescope inspection techniques to inspect piston or gas turbine engine internal components on fixed or rotary wing aircraft or in workshops while applying all relevant safety precautions.</p>
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>The underlying skills inherent in this unit should be transferable across a range of remote visual inspection applications associated with internal engine components. It is essential that inspection procedures take into account all safety precautions associated with borescope inspection techniques and the applicable engine.</p> <p>Evidence of transferability of skills and knowledge related to borescope inspection and assessment of results is essential. This may be demonstrated through application across a number of engine types. Ability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.</p> <p>Demonstrated knowledge of both borescope inspection techniques and of the subject engine will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.</p> <p>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 representative range of borescope inspection tasks. This shall be established via the records in the Log of Industrial Experience and Achievement, or where appropriate, an equivalent Industry Evidence Guide.</p>
<p><b>Context of and specific resources for assessment</b></p>	<p>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.</p>

<b>Method of assessment</b>	
<b>Guidance information for assessment</b>	

## 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.

<b>Borescope equipment</b>	<p>Borescope equipment may include:</p> <ul style="list-style-type: none"> <li>• rigid optical borescopes</li> <li>• flexible optical borescopes</li> <li>• video borescopes</li> <li>• camera attachments for optical borescopes</li> <li>• remote engine rotation equipment</li> </ul>
<b>Applicable maintenance data</b>	<p>Applicable maintenance data may include:</p> <ul style="list-style-type: none"> <li>• borescope user manuals</li> <li>• engine maintenance manuals</li> <li>• servicing schedules</li> <li>• regulatory requirements, such as Airworthiness Directives or Special Technical Instructions</li> </ul>
<b>Application</b>	<p>Application of this unit may relate to:</p> <ul style="list-style-type: none"> <li>• scheduled or unscheduled maintenance</li> <li>• individual or team-related activities</li> </ul>
<b>Procedures and requirements</b>	<p>Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise</p>

## Unit Sector(s)

Aviation maintenance

## **Competency field**

## **Co-requisite units**