



Australian Government

MEAMEC0055 Shot-peen aircraft components

Release: 1

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Modification History

Release 1. Application changed. Performance Criteria changed. Foundation Skills made explicit. Range of Conditions removed, and relevant information moved to Assessment Requirements. Assessment Requirements clarified. Supersedes and is equivalent to MEA368 Shot peen aircraft components.

Application

This unit describes the skills and knowledge required to apply hand skills and use relevant process documentation to shot-peen aircraft components, such as structural components and components of engines, propellers and landing gear shock struts from fixed and rotary wing aircraft during scheduled or unscheduled maintenance. Work may be done individually or as part of a team.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA).

Any other relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

MEA107 Interpret and use aviation maintenance industry manuals and specifications

MEA154 Apply work health and safety practices in aviation maintenance

MEA155 Plan and organise aviation maintenance work activities

MEA156 Apply quality standards during aviation maintenance activities

MEA157 Complete aviation maintenance industry documentation

MEA158 Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for shot-peening task	1.1 Obtain and interpret process documentation requirements 1.2 Prepare shot-peening equipment in accordance with the applicable

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	process
2. Apply shot-peening process to Almen strip	2.1 Select and fit the correct Almen strip and set up equipment with the correct stand-off distance and regulated air pressure or spindle speed in accordance with the process documentation 2.2 Implement applicable work health and safety (WHS) provisions, including the use of material safety data sheets (MSDSs) and personal protective equipment (PPE) 2.3 Apply the process to the Almen strip 2.4 Measure the Almen strip distortion to ensure that it is within the specified tolerance 2.5 Adjust equipment settings and repeat the Almen strip test when required 2.6 Record settings that produce specified Almen strip distortion and present the test strip for inspection
3. Apply shot-peening process to component	3.1 Clean and mask the component in accordance with process documentation 3.2 Apply shot-peening in accordance with the process documentation using equipment settings derived from Almen test strip and while observing all WHS requirements, including use of MSDSs and PPE 3.3 Check the shot peened surface for required density and coverage and re-peen, when required 3.4 Check the shot-peened component for cleanliness to ensure that all contaminants have been removed in accordance with the process documentation
4. Complete shot-peening task	4.1 Record task completion in accordance with standard enterprise procedures 4.2 Present shot-peened component for inspection, along with Almen test strip and completed documentation 4.3 Tag, seal and pack the component, where applicable and in accordance with specified procedures 4.4 Dispose of waste shot peening media in accordance with procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret maintenance documentation and procedures.
- Writing skills to complete maintenance documentation.
- Numeracy skills to interpret and communicate technical information and to measure and adjust equipment within specified tolerances.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEA368 Shot peen aircraft components.

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 MEAMEC0055 Shot-peen aircraft components

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- shot-peen applications on more than one aircraft component
- apply correct stand-off distances for either of the following:
 - nozzle distance from surface for air pressure shot peening processes, or
 - spindle distance from job for rotor shot peening
- regulate air pressure or spindle speed through either the specified air pressure applied to the shot nozzle or the specified revolutions per minute (r.p.m.) of the spindle in the rotor peening process.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- how to obtain relevant material safety data sheets (MSDSs)
- the correct use of personal protective equipment (PPE)
- work health and safety (WHS) procedures
- the reasons for shot peening
- the types of aircraft component and the materials that are shot peened
- shot-peening equipment and processes applicable to aircraft components, including:
 - air pressure or rotor propulsion of shot
 - fixed or portable shot peen units
- the uses of different types of shot peening media
- the use of process documentation
- the types of Almen test strips and their uses
- setting up and calibrating equipment for use
- preparation of surfaces for peening and cleaning after peening
- environmental requirements associated with disposal of used media.

Assessment Conditions

The following conditions of assessment represent the requirements of the regulators Defence Aviation Safety Authority (DASA) and Civil Aviation Safety Authority (CASA) and maintenance stakeholders and must be rigorously observed.

Skills must have been demonstrated under routine supervision in the workplace or in a simulated environment that reflects workplace conditions and contingencies encountered in shot-peening aircraft components. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - Almen test strips
 - general and special purpose tools and test equipment found in most routine situations
 - shot peening equipment and process documentation.

Evidence of tasks demonstrating competency must be recorded in a log of industrial experience and achievement.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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