



**Australian Government**

# **DEFEO709D Apply explosive ordnance design principles**

**Release: 2**

## DEFEO709D Apply explosive ordnance design principles

### Modification History

Release	TP version	Comments
2	DEF12 V2	Layout adjusted.
1	DEF12 V1	First release.

### Unit Descriptor

This unit covers the competency required to apply design principles of explosive ordnance in the conduct of various explosive ordnance operations and processes.

### Application of the Unit

This competency normally applies to the individual who is required to apply design principles of explosive ordnance in the conduct of various explosive ordnance operations and processes including demolition operations, improvised explosive device disposal operations, trials, technical investigations, platform integration, configuration, maintenance and inter-operability.

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

### 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 required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

### ELEMENT

### PERFORMANCE CRITERIA

#### 1. Establish reference techniques

- 1.1 ***References*** relevant to the design principles of explosive ordnance, components and associated weapons systems are identified and acquired in accordance with ***standard research procedures***
- 1.2 Specific design principles are identified within research material in accordance with standard research procedures
- 1.3 Work health and safety (WHS) principles and requirements are identified and observed throughout the process

#### 2. Apply design criteria

- 2.1 ***Explosive ordnance, components and associated weapons systems design criteria*** are applied through physical inspection and analysis against research material
- 2.2 Explosive ordnance, components and associated weapons systems characteristics are determined from an analysis of the design criteria
- 2.3 ***Explosive ordnance, components and associated weapons systems performance characteristics*** are determined from an analysis of the design criteria and technical data

## Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

### Required Skills

- access, interpret and apply technical information
- apply WHS requirements
- apply quantitative and qualitative analysis
- apply research techniques

### Required Knowledge

- analysis processes and techniques
- characteristics, technical capabilities and limitations of explosive ordnance, components and associated weapons systems
- design principles of explosive ordnance, components and associated weapons systems
- explosions and terminal effects
- relevant WHS requirements
- research processes

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

### **Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Assessment must confirm the ability to:

- comply with relevant OH&S requirements in establishing reference techniques
- determine the characteristics and the performance characteristics of explosive ordnance, components and associated weapons systems

### **Consistency in performance**

Competency should be demonstrated in a range of actual or simulated explosive ordnance contexts.

### **Context of and specific resources for assessment**

#### **Context of assessment**

Competency should be assessed in the workplace or in a simulated work environment, in accordance with all relevant legislation and Defence requirements.

#### **Specific resources for assessment**

Access is required to:

- policy and standards relevant to explosive ordnance, components and weapon systems

### **Method of assessment**

In a public safety environment assessment is usually conducted via direct observation in a training environment or in the workplace via subject matter supervision and/or mentoring, which is typically recorded in a competency workbook.

Assessment is completed using appropriately qualified assessors who select the most appropriate method of assessment.

Assessment may occur in an operational environment or in an industry-approved simulated work environment. Forms of assessment that are typically used include:

- direct observation
- interviewing the candidate
- journals and workplace documentation
- third party reports from supervisors
- written or oral questions

## 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 in the Performance Criteria is detailed below.

<p><b><i>References</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• ABCA standards</li> <li>• Academic texts and papers</li> <li>• Australian Standards</li> <li>• DEFAUST standards and instructions</li> <li>• Defence service publications</li> <li>• Foreign publications</li> <li>• Historical publications</li> <li>• Manufacturer's publications</li> <li>• NATO standards</li> </ul>
<p><b><i>Standard research procedures</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• Computer databases</li> <li>• Internet access</li> <li>• Published standards and instructions</li> </ul>
<p><b><i>Explosive ordnance, components and associated weapons systems design criteria</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• Associated safety precautions and hazards</li> <li>• Colour identification schemes</li> <li>• Explosive fill</li> <li>• Fuzing/initiation</li> <li>• Markings</li> <li>• Method of employment</li> <li>• Propulsion systems</li> <li>• Shape</li> <li>• Size</li> <li>• Terminal effects</li> <li>• Warhead design</li> </ul>
<p><b><i>Explosive ordnance, components and associated weapons systems performance characteristics</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• Firing sequences</li> <li>• Flight characteristics</li> <li>• Applications, target analysis and attack requirements</li> <li>• Arming sequence</li> <li>• Ballistic performance and tolerances</li> <li>• Energetic materials</li> <li>• Delivery system characteristics</li> <li>• Human factors</li> <li>• Initiation sequence</li> <li>• Preparation sequence</li> <li>• Terminal effects</li> <li>• Velocities</li> </ul>

## **Unit Sector(s)**

Not applicable.