Australian Government

Department of Education, Employment and Workplace Relations

PUADEFEO714C Conduct underwater explosive demolitions

Revision Number: 1

PUADEFEO714C Conduct underwater explosive demolitions

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit covers the competency required to conduct explosive demolitions in an underwater environment.

The unit also covers the conduct of maintenance on the established demolition circuits and includes the requirement to disarm and disassemble the demolition.

Application of the Unit

Application of the Unit

This competency normally applies to the individual who is required to assemble and disassemble firing circuits, and to fix detonators, primers, firing devices and explosive charges in accordance with the demolition supervising officer's plan in an underwater environment.

The individual is also required to handle, transport and protect explosives in an underwater environment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Pre-requisite Unit/s	PUADEFDV001C Dive using self-contained underwater breathing apparatus in open water to 30 metres PUADEFEO711C Conduct military demolition operations

Employability Skills Information

Employability Skills	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 Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. **Prepare for underwater demolitions**	1.1 Work task and ***worksite data*** are determined and analysed to determine the specific requirements for the explosive demolition 1.2 Work plan is developed consistent with the dive plan 1.3 ***Explosives***, ***associated equipment*** and ***protective equipment*** are ***selected***, ***inspected and prepared*** 1.4 ***Explosives and associated equipment are secured*** safely to/from the dive site 1.5 Access obstructions and other hazards are assessed and action is taken ***to remove***/***reduce the risk***

ELEMENT	PERFORMANCE CRITERIA
2. **Conduct underwater demolition**	2.1 Explosives and associated equipment are secured on self 2.2 Work-safe area is established at the demolition site and the location of divers is confirmed prior to commencing demolition task/s 2.3 ***Hazards*** relevant to the application of explosives and associated equipment are identified and managed 2.4 ***Charges*** are fixed and placed, ***line*** is laid, timing devices are set, firing point is established and circuit is connected and tested 2.5 Location and safety of personnel is confirmed prior to ***firing*** the demolition 2.6 Demolition is fired
3. **Conduct post-demolition procedures**	3.1 ***Environmental impact*** arising from use of explosives is minimised and waste products are recovered 3.2 Demolition circuit is disassembled 3.3 Explosives and associated equipment are recovered, de-serviced and stored for re-use or disposed of 3.4 Usage of explosives and associated equipment is recorded

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

- ability to dive
- fire explosive ordnance
- handle and care for explosives
- set-up explosive circuits

Required Knowledge

- dangers to explosives
- dive equipment
- dive physics
- effect of water on explosives
- explosive charges
- general occupational/diving safety awareness
- land based explosive demolitions
- oceanography
- relevant references and Australian Standards
- work hazards

Evidence Guide

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: • fix and place appropriate charges • implement occupational health and safety policies and procedures • implement diving safety awareness strategies. **Consistency in performance** Competency should be demonstrated during a demolition task over a time frame that allows for the safe demonstration of competency.
Context of and specific resources for assessment	**Context of assessment** Competency should be assessed in the ocean for all practical assessments, supported by questioning on shore or aboard vessels. When practicable, assessment should relate to the diver's vocational focus. **Specific resources for assessment** Access is required to: • complete range of diving, safety and accessory equipment • explosives • associated equipment.

EVIDENCE GUIDE

Method of assessment

This unit may be assessed with the following unit:

- PUADEFEO101D Work safely with explosive ordnance.

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

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.

Worksite data may include	Current Depth Gradient Hazards Obstacles
Explosives and associated equipment include	Anfo Bangalore torpedo Beehive Composition b Detonation cord Electrical detonators Electrical cable Fuse burning time Gelignite Hayrick M60 ignitor Non-electrical detonators Plastic explosive 4 Primers Sheet explosive Shrike lightweight exploder Tester OHMETER No.1 Mk.3
Protective equipment may include	Boots Ear protection Eye protection Gloves Helmet

RANGE STATEMENT

	Vests
Selecting, inspecting and preparing may include	In respect of explosives, associated equipment and protective equipment: • circuit tests • date checks • preparatory assembly • proofing • test firing
Action to remove/reduce the risk may include	Erecting signage Using patrol/sentry craft
Explosives and associated equipment are secured on the self for	Accessibility Lack of interference with diver mobility and dive equipment
Hazards may include	Contribution of water to explosive effect Lightning Radiation (e.g. sonar/radio) Sympathetic explosion
Charges may include	Borehole charges Breaching charges Concrete stripping charges Concussion charges Cratering charges Cutting charges Rope hole charges Shaped charges
Lines may include	Line-main Single ring-main Dual ring-main
Firing includes	Conducting misfire drills
Environmental impact may include	Physical damage to reef and associated floor eco-systems (e.g. coral) Contamination of surrounding water (e.g. leaking oil)

RANGE STATEMENT

	Visual pollution of waste material (e.g. concrete and metal parts)

Unit Sector(s)

Not applicable.