



**Australian Government**

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

# **PUADEFDV004B Dive using surfacesupplied breathing apparatus in open water to 30 metres**

**Release: 1**

## **PUADEFDV004B Dive using surface-supplied breathing apparatus in open water to 30 metres**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit Descriptor**

This unit covers the competency required to dive using surface-supplied breathing apparatus (SSBA) in an ***open water environment*** to a depth of 30 metres.

This unit specifically covers those aspects of performance unique to ***SSBA***, such as operating the surface-supply panel, inspecting and operating SSBA equipment, and conducting SSBA specific contingency drills.

Note: This Unit of Competency has been aligned with the existing Defence and Australian Diver Accreditation Scheme (ADAS) standards.

This Unit of Competency relates, in part, to the minimum standard for a diver using SSBA to a depth of 30 metres. ADAS refers to this as a Part 2 qualification. Further experience is required to gain an ADAS Part 3 license, based, in part, upon SSBA diving to 50 metres. The required ADAS dive tables for both awards are provided in the Evidence Guide. All information was correct at the time of development of this Unit of Competency; however, any diver seeking ADAS accreditation should consult ADAS and not rely on the information contained in this unit.

## Application of the Unit

### Application of the Unit

The application of this unit in the workplace - the environments, complexities and situations involved - will be written during Phase II of the Review of the PUA00 Public Safety Training Package. This text will be useful for the purposes of job descriptions, recruitment advice or job analysis; where possible, it will not be too job specific to allow other industries to import it into other Training Packages, where feasible.

## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

### Prerequisite Unit/s

PUADEFDV001B Dive using self contained underwater breathing apparatus in open water to 30 metres

## 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. Operate a surface supply panel | <ul style="list-style-type: none"><li>1.1 Surface supply panel and <b>associated equipment</b> are inspected for serviceability and all gauges are checked to ensure that they are in-date</li><li>1.2 Main and reserve air supplies are connected to the surface supply panel and supply is confirmed independently from each</li><li>1.3 Seals and connections are checked for integrity, correct function and correct line-up</li><li>1.4 Each umbilical from the surface supply panel is individually confirmed as supplying a specific diver</li><li>1.5 <b>Operator level maintenance</b> on the surface supply panel is performed at the work site</li><li>1.6 Surface supply panel is de-serviced after use</li></ul> |
| 2. Conduct dive operations        | <ul style="list-style-type: none"><li>2.1 SSBA is selected, inspected for serviceability, fitted and tested (both out of water and in-water)</li><li>2.2 Dives are conducted using SSBA and <b>dive contingencies</b> are demonstrated</li><li>2.3 SSBA is de-serviced and defects are reported in accordance with organisational procedures</li></ul>                                                                                                                                                                                                                                                                                                                                                                        |

## **Required Skills and Knowledge**

### **REQUIRED SKILLS AND KNOWLEDGE**

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

#### **Required Skills**

- conduct buddy breathing
- conduct ditching drills
- conduct lost buddy drills
- conduct unconscious companion diver drills
- fit and check SSBA
- identify distress and illness in others at depth
- inspect SSBA for serviceability and functionality
- monitor SSBA equipment and gauges
- recover and clear mask and mouthpiece
- refurbish SSBA post-dive
- switch from SSBA primary to the reserve air system

#### **Required Knowledge**

- dive physics
- dive physiology and medicine
- general occupational/diving safety awareness
- hazards to the umbilical
- marine animal threats
- marine hazards
- oceanography
- relevant references and Australian Standards
- safe operating ranges for air-supplies
- SSBA dive equipment characteristics and limitations
- surface supply panel characteristics and limitations

## Evidence Guide

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

Assessment must confirm the ability to:

- arrange for others to check equipment maintain equipment during the dive
- conduct in-water checks
- implement contingency and emergency drills including:
  - buddy breathing
  - ditching drills
  - unconscious companion diver drills
- handle non-functional surface control panel items
- handle non-functional equipment items
- operate and maintain the surface control panel during the dive
- prepare equipment for the dive
- prepare the surface control panel for dive
- recover and clear mask and mouthpiece
- refurbish the surface control panel post-dive
- refurbish equipment post-dive
- safely enter and exit the water appropriate to the launch platform, equipment and conditions
- switch from primary to the reserve air system.

### Consistency in performance

Competency will be demonstrated over a minimum of 25 (ADAS Pt 2) dives and through the operation of the surface supply panel on four separate occasions that includes the following requirements:

- a range of surface and sub-surface hazards
- current (0–2 knots)
- day and night
- oceans, seas, lakes and rivers
- sub-surface conditions:
  - temperature (0 degrees +)
  - visibility (0 metre +).

Table 1 (below) outlines the minimum dives required by this Unit of Competency. At the time of printing, this contributed towards the achievement of an ADAS Pt 2 licence, however divers seeking ADAS licensing need to confirm details with ADAS

### Table 1

| Condition                       | No of Dives    | Bottom time     | Remarks                                                 |
|---------------------------------|----------------|-----------------|---------------------------------------------------------|
| Between 0-30m                   | 25             | 960             | Represents total accrued – refer ADAS Pt 2 Unrestricted |
| <b>Special Qualifiers</b>       |                |                 |                                                         |
| 28-30 m dive                    | 1              | 15              |                                                         |
| Zero visibility                 | 1              | 20              | Depth: 2-9 m                                            |
| Night (+30 mins sunset/sunrise) | 1              | 20              | Depth: 9 m                                              |
| Other                           | 6 x boat dives | 6 x shore dives | 6 x (sim) decom stops using lazy shot & stage           |

The tables below are not relevant to this Unit of Competency but at the time of printing, contributed towards the achievement of an ADAS Pt 3 licence (SSBA diving to 50 metres). Divers seeking Pt 3 licensing need to confirm details with ADAS.

| Depth range | Type of dive | Min No of dives | Min time on bottom for dives - minutes | Objective                            |
|-------------|--------------|-----------------|----------------------------------------|--------------------------------------|
| 9 metres    | Training     | 1/1             | 30 min                                 | SurD O <sub>2</sub> drill            |
| 15 – 21 m   | Assessment   | 2/4             | 15 min                                 |                                      |
| 15 – 21 m   | Assessment   | 2/6             | 25 min                                 |                                      |
| 28 – 30 m   | Training     | 1/7             | 20 min                                 | Work task/ SurD O <sub>2</sub> drill |
| 33 – 42     | Training     | 1/8             | 20 min                                 | Work                                 |

|           |            |      |                   |                                        |
|-----------|------------|------|-------------------|----------------------------------------|
| m         | g          |      |                   | task/in-water decompression            |
| 33 – 42 m | Training   | 1/9  | 20 min            | Work task /SurD O <sub>2</sub> drill   |
| 33 – 42 m | Assessment | 1/10 | 20 min            | Work task/ SurD O <sub>2</sub> drill   |
| 42 – 50 m | Training   | 1/11 | 15 <sub>min</sub> | Work task/ SurD O <sub>2</sub> drill   |
| 42 – 50 m | Assessment | 1/12 | 15 <sub>min</sub> | Work task/ SurD O <sub>2</sub> drill   |
| 42 – 50 m | Assessment | 1/13 | 10 min            | Work task/in-water decompression drill |

In-water decompression drills in the above table are to be conducted as follows:

- 1 dive in the 33 to 42 metre depth range, remaining at the selected depth from the table below for at least the time in column 2 and conducting in water decompression for a simulated bottom time of at least that in column 3.

| 1      | 2                      | 3                                                    |
|--------|------------------------|------------------------------------------------------|
| Depth  | Time at selected depth | Simulated in-water decompression for bottom time of: |
| metres | minutes                | minutes                                              |
| 36     | 15                     | 35                                                   |
| 39     | 15                     | 30                                                   |

|    |    |    |
|----|----|----|
| 42 | 15 | 30 |
|----|----|----|

- 1 dive in the 42 to 50 metre depth range, remaining at the selected depth from the table below for at least the time in column 2 and conducting in water decompression for a simulated bottom time of at least that in column 3.

|                |                                  |                                                                |
|----------------|----------------------------------|----------------------------------------------------------------|
| 1              | 2                                | 3                                                              |
| Depth (metres) | Time at selected depth (minutes) | Simulated in-water decompression for bottom time of: (minutes) |
|                |                                  |                                                                |
| 42             | 15                               | 30                                                             |
| 45             | 10                               | 25                                                             |
| 48             | 10                               | 25                                                             |
| 50             | 10                               | 20                                                             |

### Context of and specific resources for assessment

#### Context of assessment

Competency will 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 to complete range of SSBA diving, safety and accessory equipment.

### Guidance information for assessment

Information that will assist or guide assessment will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

## 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.

#### Open water environment may include

Oceans, seas, lakes and rivers

Day or night

Sub-surface conditions:

- current (0-2 knots)
- surface and sub-surface hazards such as:
  - anchor drop zones
  - cathodic protection devices
  - electrical cabling
  - inlets and sonar/radio frequency hazards
  - marine animals
  - piers and jetties
  - pipelines
  - pollutants
  - propellers/thrusters
  - trapping hazards:
    - beams
    - culverts
    - gates
    - grottoes and caves
    - intakes and out-falls
    - nets
    - safety, anchor and communications lines
    - sewers
    - sluices
    - submerged ships, vehicles and structures
    - temperature (0 degrees +)
  - vessel rocking and associated movement
  - visibility (0 metre +)

#### SSBA includes

Bail-out cylinder and assembly

Facemask ensemble, either:

- full mask
- mouthpiece/half-mask

Umbilical

## **RANGE STATEMENT**

### **Associated equipment includes**

Gauges  
Main and reserve air supplies  
Umbilicals

### **Operator level maintenance includes**

Basic de-service  
Communications checks  
Depth monitoring  
Line pressure settings  
Primary and secondary air supplies

### **Dive contingencies include**

Air supply stoppage  
Buddy breathing  
Companion diver  
Flooded mask/helmet  
Fouled surface supply  
Umbilical blockage/choking  
Umbilical rupture

## **Unit Sector(s)**

Not applicable.

## **Corequisite Unit/s**

### **Co-requisite Unit/s**

Nil