



Australian Government

DEFDV004B Dive using surface-supplied breathing apparatus in open water to 30 metres

Release: 2

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Modification History

Release	TP Version	Comments
2	DEF12 V2	Layout adjusted. No changes to content.
1	DEF12V1	Primary release.

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

As agreed in the creation of this Training Package, applications for units transferred from the PUA00 Public Safety Training Package will be developed as part of continuous improvement plans, and taking into account the change in Unit of Competency format as detailed in templates for Streamlined Training Packages.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

DEFDV001B Dive using self contained underwater breathing apparatus in open water to 30 metres

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. Operate a surface supply panel	1.1 Surface supply panel and associated equipment are inspected for serviceability and all gauges are checked to ensure that they are in-date. 1.2 Main and reserve air supplies are connected to the surface supply panel and supply is confirmed independently from each. 1.3 Seals and connections are checked for integrity, correct function and correct line-up. 1.4 Each umbilical from the surface supply panel is individually confirmed as supplying a specific diver. 1.5 Operator level maintenance on the surface supply panel is performed at the work site. 1.6 Surface supply panel is de-serviced after use.
2. Conduct dive operations	2.1 SSBA is selected, inspected for serviceability, fitted and tested (both out of water and in-water). 2.2 Dives are conducted using SSBA and dive contingencies are demonstrated. 2.3 SSBA is de-serviced and defects are reported in accordance with organisational procedures.

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
Special Qualifiers			
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 ₂ 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 ₂ drill

33 – 42 m	Trainin g	1/8	20 min	Work task/in-wat er decompres sion
33 – 42 m	Trainin g	1/9	20 min	Work task /SurD O ₂ drill
33 – 42 m	Assess ment	1/10	20 min	Work task/ SurD O ₂ drill
42 – 50 m	Trainin g	1/11	15 _{min}	Work task/ SurD O ₂ drill
42 – 50 m	Assess ment	1/12	15 _{min}	Work task/ SurD O ₂ drill
42 – 50 m	Assess ment	1/13	10 min	Work task/in-wat er decompres sion 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.

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.

<i>Open water environment</i> may include:	• day or night • oceans, seas, lakes and rivers • sub-surface conditions: • current (0–2 knots) • visibility (0 metre +) • temperature (0 degrees +) • 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 • submerged ships, vehicles and structures • sluices • vessel rocking and associated movement
<i>Associated equipment</i> includes:	• gauges • main and reserve air supplies • umbilicals
<i>Operator level maintenance</i> includes:	• basic de-service • communications checks • depth monitoring • line pressure settings

	• primary and secondary air supplies
SSBA includes:	• bail-out cylinder and assembly • facemask ensemble, either: • full mask • mouthpiece/half-mask • umbilical
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.