



Australian Government

DEFWDV027 Employ air-lift devices under water

Release: 1

DEFWDV027 Employ air-lift devices under water

Modification History

Release 1. This is the first release of this unit of competency in the DEF Defence Training Package.

Application

This unit describes the performance outcomes, skills and knowledge required to move submerged objects using air-lift devices.

It includes preparing, selecting and inspecting air-lift bags appropriate to the lift, securing bags to the object and inflating bags to required buoyancy to manoeuvre object under control.

This unit relates, in part, to existing standards in the Australian Diver Accreditation Scheme (ADAS).

This unit applies to persons working as Defence divers but may apply to others working in this field.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies, dive plan and procedures must be consulted and adhered to.

Persons undertaking this unit work independently and perform specific tasks in a range of contexts that could be unpredictable.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Defence Work Diving.

Unit Sector

Not applicable.

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 underwater air-lift operation

- 1.1** Identify and analyse load metrics and worksite data to determine specific requirements for air-lift bags
- 1.2** Develop a work plan consistent with dive plan
- 1.3** Select, inspect and prepare air-lift bags in accordance with manufacturer specifications and safe weight limits
- 1.4** Secure air-lift bags to/from dive site
- 1.5** Assess obstructions and other underwater hazards to determine risks and manage risk control measures in accordance with dive plan

2 Operate air-lift devices

- 2.1** Determine a safe work area, confirm location of other divers and nearby vessels and structures prior to commencing and during air-lift operation, in accordance with work plan
- 2.2** Secure air-lift bags to object's lift points
- 2.3** Inflate air-lift bags in accordance with manufacturer specifications and work plan
- 2.4** Control buoyancy and movement in accordance with work plan

3 Complete air-lift operations

- 3.1** Minimise environmental impact arising from work task and recover any waste products
- 3.2** Carry out air-lift bag post-dive equipment serviceability checks in accordance with manufacturer specifications, report defects, as required, and stow in accordance with organisational requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the DEF Defence Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to DEFWDV013 Employ air-lift devices underwater.

Links

Companion Volume Implementation Guides are found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFWDV027 Employ air-lift devices under water

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying centre of gravity of lifted object
- applying relevant legislation, standards and organisational policies and procedures
- applying SCUBA, surfaced-supplied and/or CCBA operating techniques
- applying underwater risk control measures and work plan requirements
- controlling neutrally buoyant objects
- coordinating with other operators during lift
- demonstrating air-lift operations with manually inflated air bags, including:
 - 1 x lateral lift
 - 1 x vertical lift to surface
- determining hydrodynamics of object as it is raised through the water
- developing underwater air-lift work plan
- maintaining records according to organisational policies and procedures
- rigging and de-rigging air-lift equipment
- wearing of self-contained underwater breathing apparatus (SCUBA), surface-supplied and/or closed-circuit breathing apparatus (CCBA).

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- calculations to determine hydrodynamics, centre of gravity and mass of submerged objects
- characteristics and employment of air-lift bags
- dive equipment
- dive physics
- dive physiology and medicine, including:
 - compression illnesses
 - decompression illnesses
 - heat and cold illnesses

- diving descent and ascent techniques
- general diving safety awareness, including:
 - diving in harbours
 - diving in tidal waters, currents and tides
 - diving on and/or near a ship's bottom
 - entrapment/foul lines
 - lost/separated
 - marine animal threats
 - pollution/weeds
 - working in confined spaces
- oceanography
- organisational policies and procedures
- relevant dive equipment
- relevant legislation
- relevant manufacturer specifications
- relevant marine workplace hazards
- SCUBA, surface-supplied and/or CCBA operating techniques.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation, including legislation, regulations, codes of practice, workplace procedures and operation manuals
- documentation specific to the dive operations, including dive plan, risk assessment and tasking requirements
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry.

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