

SAFETY SKILLS

Lesson Objectives

This lesson develops the safety skills necessary to provide assistance to a buddy by further consolidating AS skills to increase the students' confidence in their own abilities. The lesson also introduces the rescue of an unconscious diver.

Achievement Targets

At the end of this lesson students should:

- Be competent and confident in their ability to assemble and check their equipment
- Be competent and confident in the ability to kit up and conduct a buddy check
- Be able to perform a forward roll entry in full SCUBA kit
- Be competent and confident in their ability to perform an AS ascent as both donor and recipient
- Be competent and confident in their ability to recover an unconscious buddy to the surface using a controlled buoyant lift
- Be competent and confident in their ability to secure an unconscious casualty at the surface, signal for help and tow the casualty

Lesson Contents

After consolidating AS ascents, this lesson teaches the component elements of the controlled buoyant lift (CBL) and tow in isolation before joining them all together in one complete rescue sequence.

1. Briefing

Explain the above objectives and their relevance to real diving. Include all aspects of a 'SEEDS' brief.

2. Prepare SCUBA unit

By this stage students should be competent to assemble and check their own equipment without assistance. Monitor their performance as they do so and check that they demonstrate an appropriate level of **confidence and competence**.

- Assembly
Fit BC to cylinder, fit regulator to cylinder, connect BC direct feed, secure contents gauges, AS etc
- Functional check
Slowly turn breathing gas on, check contents, breathe from main and AS demand valves, turn breathing gas off, check for leaks, 'breathe down' check, turn breathing gas back on

3. Kit up and buddy check

As with preparing the SCUBA unit, students should by this stage be **competent and confident** in helping each other kit up and conducting a buddy check. Ensure that you are included in the buddy check.

Following the buddy check carry out a brief dry run for the controlled buoyant lift exercise. This should cover how to maintain a positive grip of the buddy, and the technique for operating the buddy's buoyancy controls while still being able to operate their own. Emphasise the point that a buddy check not only ensures that each diver's equipment is correctly fitted and functioning, but is also when each diver determines how to operate each other's buoyancy controls. At depth, when an incident occurs, is not the time to try to figure this out.

4. Enter deep water using a forward roll

This exercise builds on the forward roll entry performed in snorkelling equipment in the previous lesson. This type of entry can be appropriate from some types of boat and when conditions preclude cameras etc. being handed down from the boat after entry.

5. Use of alternative supply - deeper water

As in the earlier lesson, teach for the more real situation of the recipient taking the donor's AS from its stowage, not waiting for the donor to remove it and offer it. Again simulate the realistic situation that the recipient will have no air with which to inflate the BC at the surface.

- AS ascent
Commenced as for the static AS exercise, once the recipient is breathing from the AS and positive contact is made, donor and recipient ascend at a normal rate to the surface. At the surface, donor fully inflates own BC and supports recipient. Recipient inflates BC by mouth or emergency cylinder (if fitted) while treading water
Repeat as both donor and recipient

At the end of this exercise the students should be **competent and confident** in their abilities to carry out AS ascents as both donor and recipient. Where this exercise is not performed competently or confidently, then further repetitions, with appropriate correction, should be carried out until this standard is achieved.

6. Towing a casualty - standing depth

This exercise introduces the surface tow that will follow a CBL so that it can be easily incorporated in the subsequent sequence of exercises.

- Towing hold - static
In chest deep water, identify suitable item of equipment by which to hold onto the casualty, towing arm kept straight, casualty directly behind the rescuer so that drag of casualty is taken directly along the arm
- Tow
Once hold is correctly established, commence tow, rescuer swims slightly on one side so that finning action is underneath and across the casualty and rescuer can look over shoulder to see where they are going. Drag minimised by keeping casualty directly in line with rescuer

Allow students to experiment with different holds, and using different hands, to find a hold with which they are

comfortable. Discourage holds which result in the casualty being held to one side of the rescuer, these not only increase drag (requiring more effort) but also make directional control much more difficult.

The object of this exercise is to establish a comfortable towing position. Once this has been achieved, it is not necessary at this point, to tow for any distance.

7. Controlled buoyant lift (CBL) - deeper water

Students should by now be competent to control their own buoyancy during an ascent. This is first reviewed before progressing to apply the same concepts to controlling an unconscious diver's buoyancy. This is then built up to a full rescue by incorporating the towing covered in the previous exercise. Repetition is built into this exercise to ensure that, by the end of it, the students are both competent and confident in their abilities to perform a complete rescue.

- 'Self' lift

This uses the same technique as the ascents in the earlier lessons. From a kneeling position, hold BC controls above shoulder, introduce gas in short bursts until slight positive buoyancy achieved, lift until knees clear of bottom, vent in bursts to arrest ascent, vent further to initiate descent, use short burst of inflation to cushion landing if necessary

Students should be directed to watch each other perform this exercise, particularly the use of the BC controls as this will reinforce the dry run carried out earlier. It will also enable students to appreciate that not all BCs inflate at the same rate

- 'Mini' CBL

This exercise introduces the technique of controlling another diver's buoyancy. From kneeling position, establish positive hold on casualty (avoid harness quick release fasteners), raise casualty's BC controls sufficiently to enable venting when required, introduce air in short bursts until slight positive buoyancy achieved, once casualty's knees are clear of bottom, vent in bursts to gently lower casualty back onto knees

- CBL

This exercise further develops the control of another diver's buoyancy into a complete lift. Commence as for mini lift but continue to surface, venting in bursts to maintain controlled rate of ascent - more frequent as surface is approached. At surface full inflate BC to secure casualty at the surface

(NB - Where the depth of water exceeds approximately 2m, a further intermediate ascent should be included before ascending completely to the surface)

- 'Rescue' CBL

By this point the students should have become proficient at controlling the lift itself. This exercise further develops the technique by putting it into the real-life rescue context. Starting with the casualty and rescuer approx 3m apart, casualty face down on bottom, rescuer swims to casualty, turns casualty onto back, establishes positive hold, carries out CBL to surface, at surface fully inflates casualty's BC, signals for help

- CBL and tow

This exercise combines all the elements from the earlier exercise to complete the full CBL and tow.

Starting with the casualty and rescuer approx 3m apart, casualty face down on bottom, rescuer swims to casualty, turns casualty onto back, establishes positive hold, carries out CBL to surface, at surface fully inflates casualty's BC, signals for help, tows casualty (as established during the earlier exercise) for approximately 15m

At the end of this exercise the students should be fully **competent and confident** in their abilities to carry out a CBL and tow of another diver. Where this skill is not performed competently or confidently, then further repetitions, with appropriate correction, should be carried out until this standard is achieved.

8. Deep water exit

Further practice of the exit from the water as if onto a jetty or large boat.

- Ladder exit

Hold on to secure point at side of ladder (not directly behind divers climbing the ladder), BC inflated, to await turn. When ready to exit, hold on to ladder with one hand at all times, remove fins with other, climb ladder maintaining three points of contact (eg two hands, one foot or one hand and two feet) at all times, breathe from demand valve throughout until safely away from ladder

9. Debriefing

Using the 'REAP' format, praise good performance and offer constructive criticism where necessary. The students have now mastered all the basic skills. The last sheltered water lesson will be a final review of all

these skills before they go on to apply them in a wider range of conditions in their Open Water lessons. Answer any questions that the students have.

10. Equipment care

The students should have demonstrated their **competence and confidence** in their abilities to wash and disassemble their own equipment without assistance at the end of the previous lesson. Further monitor their performance during this lesson.

- Equipment washed in fresh water, pressure dissipated from regulator, equipment disassembled, regulator dustcaps dried and fitted, and all items stowed away

Skills Performance Standards

At the end of this lesson, the students should be sufficiently competent to achieve the following skill performance standards without supervision, in the water conditions experienced:

Equipment assembly - students should assemble their SCUBA unit correctly and carry out functional and leak checks.

Kit-up and buddy check – students should assist their buddies to kit up and then conduct a buddy check covering buoyancy devices controls and functioning, breathing gas supply contents and functioning and equipment BC harness and weight system releases. Students assess how they would access their buddy's AS if required, and how they would carry out a CBL on their buddy if required.

AS ascent as donor – donor provides clear access to AS for recipient, takes secure hold of recipient and allows receiver to establish a stable breathing rhythm. After exchange of 'OK' signals ascends with recipient, venting own buoyancy device as necessary to control ascent. At surface maintains a secure hold of the recipient until the recipient's BC is fully inflated.

AS ascent as recipient – recipient removes donor's AS from stowage, clears it of water and commences to breathe from it, takes secure hold of donor, when breathing rhythm stabilised exchanges 'OK' signal with donor and then signals 'up'. recipient ascends with donor, venting own buoyancy device as necessary to control ascent. At surface recipient orally inflates BC fully.

CBL and tow – student achieves a secure hold of the casualty, inflates the casualty's buoyancy device to produce adequate positive buoyancy to lift the casualty, manages the casualty's and own buoyancy to achieve a controlled ascent to the surface, fully inflates the casualty's buoyancy device at the surface, signals for help, clears casualty's mouthpiece/mask from face, tows casualty 25m maintaining control of direction.