

THE FOURTH OPEN WATER DIVE

Lesson Objectives

This lesson will develop students' skills for rescuing an incapacitated buddy and will further extending their depth experience. It also provides the opportunity to consolidate buoyancy control skills learned in earlier lessons so that they become more natural actions. During the dive, students will also take more responsibility for actively monitoring their buddy, rather than just responding to instructor monitoring.

Achievement Targets

At the end of this lesson students should:

- Have further consolidated their ability to control their buoyancy throughout the whole dive and be competent and confident in their ability to do so
- Have further developed their awareness of what is around them in the underwater environment and their impact upon it
- Be competent and confident in their ability to recover an incapacitated diver to the surface and to summon assistance
- Be competent and confident in their ability, should the need arise, to tow an incapacitated diver
- Be competent and confident in their ability to jettison an incapacitated diver's weights/weightbelt
- Have extended their depth experience to between 15-20m
- Have developed buddy monitoring skills

Lesson Contents

This lesson will require a site that has facilities for a deep water entry, an area at a depth of approximately 6m for rescue skills development, and a maximum depth of between 15 and 20m. A shallow water area with a depth not exceeding chest depth will be required at the end of the dive. The exploratory dive part of the lesson should be conducted in a different area to that of the previous lesson.

This lesson will include a number of ascents which, because of their nature, are likely to exceed the normal ascent rate. Because of this, these ascents should be carried out before any other diving activity exceeding a depth of 6m. Careful consideration should also be given to the decompression implications of these repeat ascents on the subsequent dive profile and any further dives.

Students' buoyancy control should be monitored through all steps of this lesson to ensure students are fully **competent and confident** with their buoyancy control skills at all stages of the dive.

1. Briefing

Ensure that the students fully understand the objectives of the dive, and that the briefing includes breathing gas consumption considerations including the establishment of appropriate 'turn round' and reserve values. Decompression considerations, including the implications of the repeat ascents, should be fully explained.

Stress that in a rescue situation, getting the casualty to the surface is crucial and would involve a rather more rapid, but controlled, ascent than normal. In training, the risks involved are unacceptable, and consequently a more normal rate of ascent will be used. Because getting the casualty to the surface is so vital, if a controlled ascent cannot be achieved, an uncontrolled ascent is preferable to failure. For this reason practice in jettisoning a casualty's weights/weightbelt is included.

Brief students that during the exploratory dive part of this lesson they will be expected to take a pro-active part in monitoring each other's status and breathing gas consumption to develop their buddy skills, not just respond to instructor checks.

Ensure all the elements of a 'SEEDS' brief are covered, including any additional signals that will be used to point out items of interest and to remind them about buddy checking.

2. Prepare SCUBA unit

While students should, by this time, require minimal supervision, continue to monitor their performance, only intervening if necessary.

Report dive plan to Dive Manager.

3. Kit up and buddy check

Again, students should, by this time, require minimal supervision during kitting up. Their performance during this, and the buddy check should be monitored, only intervening if necessary. Once the students have completed their own buddy check, the instructor should then perform a check of their own equipment for the benefit of all students.

Once fully kitted, include a dry run to enable students to establish suitable holds on each other for security and the achievement of positive buoyancy for the CBL exercise. Ensure that students understand the concept of simplifying the technique by minimising the number of volumes of gas to be controlled, and that these considerations include control of their own, as well as the casualty's buoyancy. Due to the variation of location and type of buoyancy controls on dry suits and BCs there is no 'universal' technique, a point which can be used to stress the importance of these considerations during the buddy check.

4. Deep water entry

Partially inflate BC, stand at edge of entry point, breathing from demand valve, secure mask and regulator with one hand, strap to back of head with other hand, step forward into water, once surface regained turn to face other divers, give 'OK' signal (unless not OK).

5. Vertical/near vertical descent to 6m

Following a visual datum such as a rock face or shot line, perform a vertical or near vertical descent to 6m. Although students will have demonstrated the competence/confidence standard in the previous lesson, continue to monitor their performance as they develop further finesse in controlling their descent.

6. Rescue skills from 6m

These exercises build on the CBL technique learned in the Sheltered Water lessons and adapts it to the standard of equipment worn in Open Water. The principles used are the same although the means of achieving buoyancy/buoyancy control may differ. The objective, however, is to reduce task loading by minimising the number of volumes of air (on both casualty and 'rescuer') that have to be controlled.

As established in the earlier dry run, the most appropriate technique for the configurations of equipment worn may involve establishing positive buoyancy using the casualty's dry suit or using their BC. Whichever is used,

the technique should be initiated from a condition of normal diving (ie. neutral) buoyancy for both casualty and 'rescuer'. As failure to be able to initiate a lift is a significant factor where rescue attempts fail in real emergencies, techniques taught should not involve emptying air from one volume (eg. the dry suit), with its attendant increase in negative buoyancy, before attempting to lift using an alternative.

Once at the surface, to provide the maximum buoyancy to secure the casualty, the casualty's BC is fully inflated.

- '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), introduce gas into casualty's dry suit or BC 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, which will also necessitate the control of their own buoyancy during the ascent. Commence as for mini lift but continue to surface, venting in bursts to maintain controlled rate of ascent - more frequent as surface is approached. 'Rescuer' controls own buoyancy during ascent. At surface fully inflate casualty's BC to secure casualty at the surface. Signal for assistance (*Note: A suitable training signal should be substituted for the emergency signal to avoid misunderstandings by other groups of divers. Ensure however that students do know the real emergency signal and why another is being substituted*)

- Tow casualty 25m

Identify suitable item of equipment by which to hold onto the casualty, towing arm kept straight, 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 and effort required minimised by keeping casualty directly inline with the rescuer

At the end of this exercise the students should be fully **competent and confident** in their abilities to carry out a rescue 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.

7. Exploratory dive to between 15 and 20m

As in the previous dives, the object is to provide time for the students just to enjoy being under water while providing further opportunity to consolidate buoyancy control, finning action and swimming attitude. By this lesson students should be developing more precision in their control of their buoyancy as well as being more aware of avoiding damage to the environment. Instructors should continue to monitor the students' performance throughout the dive and their general awareness of the underwater environment, taking corrective action where necessary.

While providing the opportunity for a further demonstration of dive leading, this exercise also serves the dual function of developing the students' buddy monitoring skills.

- Buddy monitoring

Frequent exchange of 'OK' signals, periodic checks of breathing gas consumption, relative positions enable divers to see buddy, distance between buddies appropriate to both underwater visibility and the need to be able to render assistance if required

- Dive leading

As in the previous lesson, demonstrate management of the dive profile, pilotage and make the dive enjoyable

- Manage dive to observe agreed depth limits. Management of dive time and profile to observe agreed 'turn round' and reserve breathing gas contents
- Identification of topographical features to follow and significant landmarks. If landmarks required for return leg, look at aspect that will be seen in the return direction
- Point out any interesting topography or underwater life so that students learn to observe their surroundings

8. Vertical/near vertical ascent

Controlled ascent, with visual contact being maintained and judging rate of ascent using a visual datum such as a rock face or shot line. Briefly pause at 6m check depth to ensure buoyancy is fully under control before continuing with final slow ascent to surface. At surface inflate BC, swim to standing depth water.

9. Casualty's weight/weightbelt jettison

In no more than chest deep water, casualty lies face down on bottom, 'rescuer' approaches, rolls casualty onto

back, takes secure grip of casualty, unfastens weights restraint/weightbelt buckle and pulls weights/weightbelt clear of casualty before jettisoning.

At the end of this exercise the students should be fully **competent and confident** in their ability to jettison another diver's weights/weightbelt.

10. Exit

Exit by means suitable to local conditions.

Report back to Dive Manager.

11. De-kit

As with kitting up, students should by this time be sufficiently competent that they only require monitoring.

As previously, although it is better to debrief the dive while it is still fresh in students' minds, depending upon weather conditions, and whether the students have got cold on the dive, the instructor should decide whether it is better to remove protective clothing before or after the debrief.

12. Debrief

Check that all students have enjoyed the dive and remind them of both interesting features/life that they saw. Review their performances, both generally during the dive and of the specific rescue exercises, highlighting areas of good performance and offering constructive criticism where necessary. Remind students of the principles behind the CBL technique and re-emphasise that there is no one technique that will apply to all configurations of equipment. Refer back to the importance of the buddy check in considering rescue implications of their buddy's equipment before a dive commences. Irrespective of the technique used, the prime objective is to ensure that the casualty is recovered to, and secured at, the surface. Problems resulting from an uncontrolled ascent, either due to a rapid CBL or to jettisoning weight, can be resolved. Not recovering a casualty to the surface cannot.

Recap the dive leading aspects including the features used for pilotage, and their performance at buddy monitoring. Explain how this will be relevant to the next lesson where they will take a more active role in dive leading.

13. Equipment care

Remind students to clean and dry their equipment on their return home.

Adapting this Lesson

As with the previous lesson, irrespective of the standard of protective clothing, this lesson extends the students skills to depths beyond their previous experience. While the detail of how buoyancy is controlled (ie. via BC rather than dry suit), and hence how the CBL will be achieved, will vary, the overall content remains valid for all standards of protective clothing.

Skills Performance Standards

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

Buoyancy control – while maintaining visual contact with a fixed reference (eg. bottom, rock face, shot line, etc.) students can:

- control their rate of descent
- arrest their rate of descent at any time without physical contact with any fixed reference (eg. for ear clearing etc.)
- arrest their descent at target depth without contacting the bottom
- maintain a constant swimming depth (+/- 1m) while remaining clear of the bottom
- control their rate of ascent
- arrest their rate of ascent at any time without physical contact with any fixed reference

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.

Weights/weightbelt jettison – student takes secure grip on casualty, locates and operates weights/weightbelt release quickly and without fumbling, pulls weights/weightbelt clear of casualty before releasing, secure grip maintained throughout, released weights/weightbelt fall cleanly away from casualty without snagging on any equipment.

