

DIVER RESCUE

Lesson Objectives

This lesson comprises an element of revision of the CBL techniques learned during Ocean Diver training, together with the extension of the students' overall rescue skills by the addition of in-water RB and the removal of the casualty from the water onto the land

Achievement Targets

At the end of this lesson students should:

- Have revised the CBL technique and be competent and confident in their ability to recover an incapacitated casualty to the surface and to secure them there
- Be competent and confident in their ability to jettison a casualty's weightbelt if necessary
- Be competent and confident in their ability to administer in-water RB while towing a non-breathing casualty
- Be competent and confident in their ability use assistance to de-kit and land a non-breathing casualty onto a shelving shore

Lesson Contents

The lesson contents build on the content of the Sheltered Water Rescue Skills lesson (SS 1) to transfer the relevant skills into open water conditions, with the attendant impact from protective clothing. The various component skills are practiced in isolation before they are all brought together in a complete and unbroken rescue sequence, from the retrieval of a non-breathing casualty from a depth of 6m, through to the placing of that casualty in the recovery position on land.

1. Briefing

As Ocean Divers, the students are already qualified divers and therefore have some diving experience so, while including all the elements of a SEEDS brief, the level and tone of the briefing should reflect this. Explain the above objectives of the lesson, and in particular how rescue skills, being the least used, deteriorate more quickly. For this reason an element of refresher training is incorporated throughout BSAC diver training. Having gained some diving experience, it is now appropriate for the students to gain the skills that will enable them to take a wider role in rescue situations.

Stress the importance of 'less haste more speed' during the rescue sequence. Proceeding at a rate at which students can clearly think ahead to what the next step is, is far more effective than rushing into doing the wrong thing.

Report dive plan to Dive Manager.

2. Kit up and buddy check

At this stage kitting up should require little supervision by the instructor but, as on every dive, a formal buddy check should be conducted. Highlight the importance of the familiarity with their buddy's equipment provided by the buddy check, to the subsequent exercises of weightbelt/weights jettison and de-kitting the casualty for landing.

3. Tow and RB - standing depth initially

With the added encumbrance of protective clothing, the techniques learned in the Sheltered Water lesson will feel more awkward. The technique is first checked static to facilitate easier monitoring and, where necessary, correction or adaptation before practising the technique mobile in deeper water.

- Recap towing hold and RB technique - static

In chest deep water establish hold on casualty's chin with one hand and some suitable grip on casualty's equipment, either under far shoulder or under the pillar valve (depending upon rescuer's reach), with other hand. Arms initially kept straight keeping casualty in line behind the rescuer so that drag of casualty is taken directly along the arm

Rescuer brings casualty closer alongside their head to administer RB by bending arms, forearm of hand gripping chin against casualty's shoulder to secure neck extension/keep mouth closed. Use hand underneath casualty to push upwards to roll casualty towards rescuer, rescuer seals mouth over casualty's nose, holds for approx 1 second to simulate ventilating the casualty, casualty allowed to roll onto back. Roll/ventilation sequence repeated then casualty returned to straight arm tow position

- Tow and RB - mobile

Repeat the sequence of two ventilations of RB approximately every 15 seconds several times while swimming into deeper water (2-3m in depth) and back. While rolling/ventilating the casualty, rescuer will find it easier to adopt a more upright posture in the water rather than trying to maintain the tow

Where students are experiencing difficulty, instructors should not insist on dogmatic adherence to one particular technique, but assist them to establish a variation which they can effectively perform. The key requirement is effectiveness.

4. Jettison of casualty's weightbelt/weights - standing depth

This exercise is a refresher of the skill learned during Ocean Diver training and reinforces the concept of weight jettison as a back-up in cases where a CBL is not possible (eg. gas depletion). Because of the change of buoyancy involved, this exercise should not be performed in water deeper than chest deep.

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 abilities to jettison another diver's weights/weightbelt.

5. Landing casualty onto a shelving shore - from standing depth

With the rescuer able to stand, RB becomes easier, but this must be balanced against the fact that the rescuer will be tired, as in reality, and the casualty still needs to be urgently removed from the water. The use of an

assistant helps in some respects, but introduces the additional task of their needing to be managed. Following one minute of RB in standing depth, commensurate with the removal of kit and the urgent removal of the casualty from water.

- Kit removal

In waist depth water, following one minute RB, the rescuer removes own weights/weight belt, fins and SCUBA unit, gives assistant instructions on to how to help where required. The rescuer then gives assistant instructions as to how to help remove the casualty's weights/weight belt, disconnect all waist and shoulder straps, and dry suit direct feed. No rescue breathing takes place during this de-kitting session. At rescuer's command, assistant deflates casualty's BC as rescuer takes over supporting the casualty. Assistant sinks SCUBA unit below casualty, and water, and pulls clear

- Landing casualty

Still in waist depth water, rescuer instructs assistant how to remove casualty from water. Casualty positioned ready with arms straight out from body ('crucifix' position). Rescuer and assistant position themselves alongside, and on opposite sides of, casualty's chest, facing head. Both kneel, place crook of elbow of inside arms under casualty's armpit, (hand supporting head or back of neck if possible), casualty's arm secured straight across their chests with outside arms. On signal from rescuer both stand, lifting casualty, walk forward dragging casualty clear of the water. Once clear, on signal from rescuer, both kneel to lay casualty on ground, rescuer re-commences RB at normal on-land rate

- Recovery position

Casualty's near arm placed in 'how' position or under buttock (palm up), other arm folded across face, back of hand against near cheek, far leg bent up at knee, far arm and leg used to roll casualty into three quarter prone position, positions of arms and legs adjusted for stability and to keep torso weight off casualty's chest, head adjusted for clear airway

6. Kit up and buddy check

Although buddy checks were performed earlier in the lesson, once all divers have refitted their equipment ensure that sufficient buddy check are repeated to confirm that all equipment has been refitted/connected correctly.

Include a dry run of CBL technique/buoyancy controls operation, both to determine the most appropriate technique for the configurations of equipment worn, and to give practice in the operation of the relevant buoyancy controls, particularly where the students are wearing gloves. The objective of the technique should be to reduce task loading by minimising the number of volumes of gas (on both casualty and rescuer) that have to be controlled. The type and location of buoyancy controls may dictate that positive buoyancy is established using the casualty's dry suit or alternatively using their BC.

7. Rescue - from 6m

This exercise practices the CBL in isolation before finishing with a complete rescue sequence which incorporates the tow, RB, and landing as practiced earlier.

All CBL practice should be initiated from a condition of normal diving (ie. neutral) buoyancy for both casualty and rescuer.

- 'Mini' CBL

This exercise recaps the control of another diver's buoyancy using the technique established in the dry run. From a kneeling position, establish positive hold on casualty (avoid harness quick releases), introduce gas into casualty's dry suit or BC in short bursts until slight positive buoyancy achieved, once casualty raised about 1m, venting in short bursts to control and arrest ascent. Vent small amount to initiate descent, inject gas in bursts to control descent rate and cushion landing

- Complete rescue sequence

The following elements should be performed as one continuous sequence

- CBL - Commence with casualty face down on the bottom. rescuer approaches casualty, establishes positive hold on casualty, introduces gas into casualty's dry suit or BC to initiate CBL, continues lift to surface, venting in bursts to maintain controlled rate of ascent - more frequent as surface is approached. 'Rescuer' controls own buoyancy during ascent.
- Rescuer secures casualty at surface - by fully inflating casualty's BC. Rescuer inflates own BC for adequate surface buoyancy
- Tow incorporating RB for 25m - rescuer removes casualty's facemask and mouthpiece, establishes grip on chin and underneath casualty, gives RB for 1 min (10RBs), signals 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) tows casualty for approximately 25m to shallow water, administering two cycles of roll/RB approximately every 15 seconds as practiced earlier

- Remove equipment - In waist depth water, rescuer calls for assistance and gives assistant instructions on how to help to remove their 'rescuers'' weights/weightbelt, fins and then SCUBA unit and then casualty's equipment as practiced earlier.
- Land casualty - rescuer instructs assistant to help land the casualty as practiced earlier. Rescuer recommences RB at on-land rate
- Recovery position - rescuer places casualty in recovery position as practiced earlier

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 of the sub-standard elements, with appropriate correction, should be carried out until this standard is achieved. Note that where this involves the CBL itself, appropriate decompression considerations, due to the multiple ascents involved, should be taken into account

Report back to Dive Manager.

8. Debrief

Review student's performance, highlighting areas of good performance and offering constructive criticism where necessary.

Adapting this Lesson

The following paragraphs offer guidance on how to adapt the lesson contents for circumstances different to those assumed for the above lesson notes.

Protective clothing/water conditions same as for Sheltered Water training

Under these circumstances, the above contents include some unnecessary duplication. Consequently the object of the lesson becomes the further extension of the depth from which the CBL is performed and the completion of the sequence to land the casualty. Items 3, 4, the kit removal part of item 5, and the 'Mini' lift of item 6 can therefore be deleted. Where a suitable shelving shore is available for the Rescue Skills Sheltered Water lesson, the remaining elements of item 5 could be incorporated into the Sheltered Water lesson.

Protective clothing/water conditions differ from Sheltered Water training

- Buoyancy change only

To confirm that the correct adjustment to the weight carried has been made, a buoyancy check (mid water hover) should be conducted at the start of the lesson. Otherwise the same adaptation as in the previous paragraph can be made

- Full wet suit/changed water conditions

The encumbrance aspects of the protective clothing still apply, and consequently the lesson content should remain unchanged

Skill Performance Standards

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

Rescue sequence - 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, clears casualty's mouthpiece/mask from face, gives RB for 1 min (10RBs), signals for help, tows casualty 25m maintaining control of direction and administering two effective breaths of RB approximately every 15 seconds during tow. Gives clear instructions to assistant regarding removal of own and casualty's equipment. Once equipment removed, gives clear instructions to assistant as casualty is moved clear of water, casualty's head protected throughout. Clear of water effective RB resumed at on-land rate. When indicated by instructor, casualty gently placed in recovery position, head protected throughout, positioned to keep weight off chest and head placed for clear airway and natural drainage of any fluid.