

## Skill Development Course Syllabus Accelerated Decompression Procedures Diver

### Aim

- Teach the relevant knowledge necessary for safe diving when using nitrox gases for accelerated decompression diving.
- Teach the skills necessary to safely dive when using enriched nitrox gas mixes of up to 80% oxygen for accelerated decompression
- To introduce new concepts and skills that promote thought about making informed choices
- To promote self reliance within a buddy diving ethos

### The Certification

A BSAC Accelerated Decompression Procedures Diver is competent to:

- Conduct dives with a buddy who is a minimum of a Sports Diver (or equivalent) within the restrictions of the lesser qualified or experienced, in conditions already encountered by either during their training or previous experience.
- Conduct dives within BSAC Safe Diving guidelines
- Dive to maximum depths as defined by their Diver certification of:
  - Sports Diver – 35 metres
  - Sports Diver + ADPD + Twinset Diver – 40 metres
  - Dive Leader and above – 50 metres
- Conduct such dives with a more experienced or more highly qualified diver to expand their experience of depth or other conditions, within the limits of their Diver qualification, beyond that previously encountered.
- Plan and conduct dives involving mandatory decompression.
- Plan and conduct dives using nitrox gas mixes for the dive time of not more than 36% oxygen when using BSAC Ox-stop tables or 50% oxygen when using a multi-mix programmable dive computer
- Plan and conduct dives using nitrox gas mixes of up to 80% oxygen as decompression gases to accelerate decompression.
- Plan and conduct dives involving partial pressures of oxygen up to 1.4 bar for the dive time (back gas) phase of the dive and up to 1.6 bar from a maximum depth of 10 metres for the decompression phase of the dive.

- Rescue other divers from depth.
- Conduct dives where other divers, capable of providing assistance and rescue management skills, are available at the surface.

## Course Outline

The accelerated Decompression Procedures Diver course consists of the following elements:

- Four classroom lessons
- Two dry practical tutorials
- A confined water lesson
- Two open water lessons, dependent on student performance, with a total underwater duration of not less than 60 minutes and an individual lesson of not less than 25 minutes duration.

All practical wet training in both confined and open water includes the achievement of specific performance standards at appropriate points throughout the lessons.

## Course Programme

- Theory lesson – Course introduction
- Theory lesson – Physics and Physiology
- Theory lesson – Equipment
- Dry practical tutorial – Equipment configuration
- Confined water lesson – Core skills
- Theory lesson – Dive Planning
- Theory lesson – Dive Planning – What if and Practicalities
- Tutorial – Dive Planning
- Open water - Dive 1
- Open water - Dive 2

## Entry Requirements

In order to attend this course; students must comply with the following:

- Be medically fit to dive
- Be a minimum of BSAC Sports Diver (or equivalent with certification to a depth of 30 metres)
- Sports Divers who qualified prior to the inclusion of nitrox into the Sports Diver course should have completed the BSAC nitrox workshop.
- Have completed the Buoyancy workshop and achieved buoyancy and trim skills to the level of BSAC Gold standard.

- Able to hold a horizontal position in the water within a depth range of  $\pm 0.5$  metres with minimal movement of fins or arms.
- Must be able to demonstrate a level of proficiency in diving. In general terms, this usually entails a minimum of 20 logged dives since qualifying as BSAC Sports Diver
- Provide evidence of logged dives to a minimum depth of 30 metres.

## Equipment Requirements

For the dry practical, confined and open water training, the following equipment configurations are assumed;

- This is likely be a minimum primary (back) gas cylinder/s of sufficient capacity to enable the student to conduct a dive to 35 metres and surface with a reserve of one third of working pressure (77 bar for a 232 bar cylinder). This cylinder must be in oxygen service. This may be one of the following
  - A minimum capacity cylinder of 12 litres at 232 bar however, some divers of small physique and some very experienced divers are able to achieve this with a single 10 litre cylinder @ 232 bar
  - Students may use a Twinset of minimum capacity 2 x 7 litres
  - If students chose to use a Twinset fitted with an isolation manifold they should be proficient in isolation and shut down procedures or dive with the isolator closed.
  - A decompression gas cylinder. Minimum capacity 3 litres @ 232 bar. This cylinder must be in oxygen service.
  - This may be bracket mounted to the primary cylinder/s or fitted with a harness and clips for side/front slinging
- At least one regulator suitable for use with nitrox gas mixes, for use on the primary gas. This should be fitted with a pressure gauge and direct feed for supplying a buoyancy system
  - If a Twinset is used then direct feeds should be fitted to both regulators to supply two buoyancy systems where they are available
- The primary gas should be fitted with an alternative Gas Supply (AGS) demand valve, minimum hose length 1.5 metres. This can be in the form of:
  - An "Octopus" demand valve fitted to the primary gas first stage
  - or
  - A second regulator fitted to either a "Y" valve on the cylinder or a redundant primary gas supply such as a:
    - Pony cylinder
    - Twin-set
- The decompression gas should be fitted with a dedicated regulator and pressure gauge suitable for use with nitrox gas mixes of up to 80% oxygen (Oxygen service). If there is only one direct feed for a buoyancy system on the primary gas, the decompression gas should be fitted with one too, if so this should be in oxygen service.
- All direct feed fittings should be inter-changeable where practicable.

- Suitable protective clothing to ensure the diver is comfortable for extended durations in the temperature of water available for the course and.
- BCD or Wing
- Mask and fins
- Weight-belt or integrated weights where necessary
- Depth gauge and watch or dive-timer and/or decompression computer
- Underwater slate and pencil suitable for writing run times on
- Delayed surface marker buoy and reel capable of reaching the surface comfortably from at least 35 metres
- Knife and/or line cutter

### **Instructor Requirements**

BSAC Accelerated Decompression Procedures training is required to be carried out by, or supervised by an approved BSAC Accelerated Decompression Procedures Diver Instructor or higher.

Assistant Accelerated Decompression Procedures Diver Instructors are Open Water Instructors who have successfully completed the Accelerated Decompression Procedures Diver course and have a minimum of 10 logged dives involving accelerated decompression using nitrox mixes of between 50 % and 80 % oxygen.

They may carry out the instruction of student Accelerated Decompression Procedure Divers under the supervision of an approved Accelerated Decompression Procedures Diver Instructor (or higher). The following levels of supervision apply;

- Classroom and dry practical – under on-site supervision
- Confined and open water lessons - under direct (in-water) supervision

The process of qualifying as a BSAC ADPD Instructor is defined in the relevant BSAC Technical Diver Instructor Standards and procedures.

### **Instructor Ratios**

For the classroom based theory presentation lessons, the maximum ratio of students per instructor is driven by logistical size, comfort and media presentation facilities available.

Dry practical lessons - To ensure that each student can fully participate in the exercises and receives effective tuition, the lesson contents assume a ratio of six students per instructor.

For all wet lessons, student/instructor ratios should comply with the following guidelines:

### **Confined Water Lessons**

The confined water lesson notes assume the most likely scenario of the lesson being carried out in open water where time constraints are typically not onerous. However, this does not prevent the lesson being conducted in a swimming pool.

In order that all students can receive effective tuition during this lesson, a maximum ratio of four students per instructor is assumed.

In less favourable circumstances, this ratio may need to be reduced appropriate to water conditions and available time.

Where water conditions allow longer lessons, the above ratios may be increased to a ratio of a maximum of six students per instructor provided that:

- All students can receive effective tuition within the time available
- Underwater visibility is a minimum of 5 metres
- The instructor is a minimum grade of BSAC Accelerated Decompression Procedures Diver Instructor
- The instructor has the assistance of another diver, minimum qualification Dive Leader and Accelerated Decompression Procedures Diver or equivalent, to monitor the safety and control of students. This safety diver may not teach unless he/she meets the requirements for a BSAC Assistant Accelerated Decompression Procedures Diver Instructor.
- The lesson briefing includes clear directions as to the role of the assisting diver during skills instruction.

## **Open Water Lessons**

Because of the nature of the exercises being taught, the lesson contents assume a ratio of two students per instructor. This may be increased to up to four students per instructor providing the instructor has the assistance of another diver, minimum qualification Dive Leader and Accelerated Decompression Procedures Diver or equivalent, to monitor the safety and control of students. This is to ensure that each student receives safe effective tuition.

## **Assessment**

The Accelerated Decompression Procedure Diver course is an instructor assessed course. This means that the instructor must continually assess the student's knowledge and skills as the course progresses.

At any point in the course, progression should not take place unless the instructor is satisfied that the student has reached an adequate knowledge and skill level to cope comfortably with the next stage.

- Practical Assessments

As in diver training, where specific performance standards are required to be achieved, these are identified in the lesson notes by the words "Competent and confident". Where these words appear in the lesson content, students should have progressed sufficiently to be able to achieve the specified performance standards without supervision, as applicable to the water conditions appropriate to that lesson.

The appropriate performance standards are therefore incorporated into the relevant lesson notes.

During the lessons the students should also be monitored for any deterioration of skills learned during basic diver training. Corrective instruction should be provided to re-establish the appropriate performance standard where necessary.

- Theory Assessment

There is no specific theory assessment in the course syllabus. Instructors should satisfy themselves of adequate knowledge transfer during the classroom and tutorial lessons.

## Facilities

- Suitable classroom with teaching aids for formal PowerPoint presentations.

Suitable confined shallow water site, generally no deeper than 10 metres with a stepped or gently shelving open bottom of firm composition, has adequate visibility (minimum 5 metres) and is free from significant water movement from either waves or currents.

- Suitable open water dive sites encompassing conditions beyond those defined for confined water, including a variety of topography and underwater life and which may have noticeable water movement due to waves or current. Visibility will generally be in excess of 4 metres but may, on appropriate occasions be less, for example when instructing students on a one-to-one basis.
- For the open water dives the use of nitrox as a dive gas and rich nitrox mixes to accelerate decompression is a requirement of the course.

## Qualification

Candidates shall be awarded the BSAC Accelerated Decompression Procedures diver certification on achieving the required standard of proficiency. Course certification will be issued by BSAC HQ after the event.

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