Programme 3.C.2 / BOD no 179 (11-22-2012)
Extended Range Diver CMAS

Minimum Training Programme Content

1. Required theoretical knowledge

1.1 **Introduction**

1.1.1 The participant shall be provided with all such information, as provided for in Clause 4.2 of Chapter 1 in order to provide him with a clear understanding of subject matter relating to Extended Range Nitrox diving including accelerated decompression methods with practical use of the additional diving and associated equipment

1.1.2 The participant will be provided with a clear understanding of the physical and physiological aspects of advanced Nitrox diving and accelerated decompression procedures.

1.1.3 The participant will be provided with a clear understanding of the extensive dive planning required for Extended Range Nitrox diving, including Risk Assessment, equipment selection, equipment configuration, back-up gas, escape routes, accelerated decompression and support teams.

1.1.4 The participant shall be provided with the information about the CMAS as provided for in Clause 4.3 of Chapter 1.

1.2 **Equipment**

1.2.1 The participant shall have an appropriate knowledge concerning the physical characteristics, operating principles, maintenance and use of EANx diving equipment. This shall include at least the following:

1.2.1.1 All equipment must be well maintained and fit for use

1.2.1.2 How to handle oxygen equipment safely and its suitability for diving equipment

1.2.1.3 How EANx use impacts dive equipment (e.g. increased oxidation and wear),

1.2.1.4 Using standard scuba equipment with EANx, including National Inspection, labelling and Test Standards for dive cylinders and other equipment

1.2.2 Participants will only useequipment that they are familiar with. Note: this is not a course for experimentation with new or unfamiliar equipment.

1.2.3 Recommended Equipment list:
One Twin cylinder set; two stage-decompression cylinders including harnesses; one twin bladder Buoyancy Control Device (BCD) (when diving in dry-suit single bladder BCD is sufficient); one run-time underwater slate /wet notes; one Demand Valve (DV) with standard inter-stage hose and one DV with 1.5 metre long inter-stage hose plus two-decompression DVs, all with submersible contents pressure gauges; one primary underwater torch and one back-up underwater torch; two small very sharp knives (or small sharp knife and a line-cutter); two face masks; two decompression reels each with 100 metres of line; one Red Delay Surface Marker Buoy (DSMB) and one Yellow DSMB these may be inflated either by their own mini-cylinders or from a gas-gun supplied via one of the diving (not deco) DVs; dive-suit to accommodate the expected water temperature (dry-suit to have a separate suit inflation system; two depth gauges or two suitable personal decompression computers (PDCs) or timing devices, and a Jon-line.

1.3 **Practical knowledge**

1.3.1 The participant shall have an appropriate knowledge concerning the physical principles of EANx and application to diving activities. This shall include at least the following:

1.3.1.1 Determine the required quantity of gas to carry, including decompression and bail-out gas

1.3.1.2 Selecting the correct Nitrox mix for the planned MOD
1.3.1.3 The preparation of Nitrox Dive plan and back-up plan
1.3.1.4 Equipment configuration for Stage Stop diving
1.3.1.5 Functional check of the diving equipment and buddy check
1.3.1.6 Accuratly execute the prepared dive plan, demonstrating gas switching, completing stage stops within the time limits and depth (± 0.5m) and carrying out any required air breaks
1.3.1.7 Deployment of DSMB of the correct colour and understanding of using a DSMB for assistance

1.3.2 The participant needs to prove competency in carrying out these skills over four dives with a minimum duration of 100 minutes bottom time plus the required decompression time.
1.3.2.1 No more than two dives to be carried out per day.

1.3 **EANx Hazards**

1.3.1 The participant shall have an appropriate knowledge concerning hazards related to the handling of EANx mixtures with elevated oxygen levels. This shall include at least the following:

1.3.1.1 Risk of fire or explosion when using pure oxygen
1.3.1.2 Factors likely to increase the risk of fire or explosion, including location and ventilation

1.4 **Medical Aspects**

1.4.1 The participant shall have an appropriate knowledge of the causes, symptoms, prevention, first-aid and treatment of enriched EANx diving medical problems. This shall include at least the following:

1.4.1.1 Revisit all aspects learned during the Advanced Nitrox course.

1.5 **Nitrox Dive Planning**

1.5.1 The participant shall have an appropriate knowledge of using dive tables, dive computers and/or dive planning software, including how to:

1.5.1.1 Revisit all aspects learned during the Advanced Nitrox course.

1.6 **Career development**
1.6.1 The participant shall be provided with the career development information as provided for in Clause 4.4 of Chapter 1.

2. Required practical skills

2.1 **Practical Skills Application Section**

2.1.1 The participant shall master the following skills:
2.1.1.1 Selection of the correct mix for the required MOD
2.1.1.2 EANx gas analysis procedures
2.1.1.3 Preperation of the Dive plan and back-up plan
2.1.1.4 Personal equipment configuration and stage equipment configeration
2.1.1.5 The accurate execution of a dive plan, gas switching and decompression stop

3 Instructor / Candidate Ratio

3.1 Theory / classroom: Instructor / Candidate Ratio: 1:8
3.2 Practical / Open water: Instructor / Candidate Ratio: 1:2