



Technical Diver Program

Overview

The Technical Diver program is designed to introduce experienced advanced divers to the techniques and methods employed in diving beyond the traditional recreational diving limits. The course provides training in decompression techniques, the use of technical enriched air nitrox (EANx) and oxygen decompression gasses, and the fundamentals of using both oxygen-enriched and helium based mixed gas (Helitrox and Heliair) for dives to 180 fsw (55 msw). Successful graduates of this program will receive NAUI certifications as Technical EANx Diver, Helitrox Diver, Decompression Techniques Diver and Heliair Diver. Candidates entering the program must already have mastered the fundamental recreational diving skills such as exact buoyancy control, dive planning protocols, teamwork and emergency management. Students enrolled in the Technical Diver program will have the opportunity to cultivate these skills and many new ones while using more sophisticated equipment designed for pursuing technical level diving.

Qualifications of Graduates

Upon successful completion of this course, graduates are considered competent to plan and execute EANx, Helitrox or Heliair based dives that require stage decompression utilizing 100% oxygen for decompression without direct supervision, provided the diving activities and the areas dived approximate those of training.

Prerequisites For Entering The Program

- Minimum age of 18
- Must be physically fit and have medical clearance for diving (within 12 months)
- Minimum certification of NAUI EANx Diver, Deep Diver Specialty and Master Scuba Diver (or equivalents). NAUI Intro to Tech is strongly recommended, as are Rescue Diver, First Aid, CPR and Oxygen Administration.
- Proof of 100 logged dives with 10 dives (beyond certification) on EANx. A reasonable amount of the dives should be in the 100 to 130 fsw (30 to 40 msw) range.
- A pre-course interview and screening dives may be arranged.

Course Duration

- Classroom hours – 24 are estimated
- Open water dives – 15 minimum
- No dives will exceed 180 fsw (55 msw)

Equipment Requirements

- Twin cylinders with isolation manifold
- 5 to 7 foot primary regulator hose, with short backup regulator hose and backup regulator hung around neck on a necklace (bungee or surgical tubing)
- Single SPG on left side, clipped off on waistband, hose short enough to stay close to body
- Wing style BC (backplate and wing), with hard plate preferred, but soft harness (Transpac or IQ Pack for example) are acceptable
- Redundant depth gauges, and timing devices, i.e., dive computers or bottom timers
- Compass
- Slate or waterproof paper and pencil
- Dive knife/tool
- Emergency signaling device
- Waterproof dive tables
- Minimum of one 50 lb/23 kg lift bag and one line reel
- Cylinders and regulators (back gas and deco systems) properly cleaned and labeled as required for the breathing gas mixtures involved, with a separate submersible pressure gauge for each gas system used
- Oxygen analyzer, Helium analyzer (ask the shop for more details)

Skill Requirements

- Analyze your own breathing gas mixture
- Minimum of 4 dives to be made using EANx or Oxygen as a decompression gas.
- Plan and safely execute each dive (NAUI Dive Planner usage)
- Simulated or actual decompression stops
- Isolate and switch over from a malfunctioning regulator
- Air sharing on the long hose through a simulated restriction
- Underwater navigation
- Deployment of a lift bag/surface marker buoy (2 dives)
- Simulated diver rescues involving Out of Gas scenarios and Oxygen Toxicity
- Buoyancy and trim control
- Propulsion techniques such as frog kick, modified flutter kick, helicopter turns, and back-downs
- Team diving
- S-Drills (Safety drills)
- Underwater communication
- Stage bottle handling
- Lost visibility, lost mask and primary light failure protocols

- Omitted decompression procedure
- Missing diver search

Academic Topics

- NAUI RGBM Theory and tables
- Physics, physiology and medical aspects as applied to planned decompression diving, with special emphasis on mechanisms of bubble formation
- Inert gas perfusion and diffusion and gas tensions
- Equivalent narcosis depth (END) and Equivalent Air Depth (EAD)
- Advantages of oxygen and oxygen enriched gas mixtures for decompression
- Oxygen toxicity
- Dive time and gas management
- Hypoxia
- Narcosis
- Carbon Dioxide toxicity and Carbon Monoxide toxicity
- Precautionary stops compared to Required decompression stops
- Deep stop models and theory
- Ascent and descent rates
- Hyperthermia and Hypothermia
- Psychological considerations, task loading, stress, perceptual narrowing and panic.
- "Air breaks" during decompression and the "off-phenomenon"
- Omitted decompression, altered bottom time profile, lost equipment