

Technical Diver



A. Purpose

1. This Program is designed to train divers to conduct dives to depths between 100 fsw (30 msw) and 170 fsw (51 msw) using custom blend breathing gas mixtures; and to provide greater understanding of custom blend breathing gas mixtures, a complete knowledge of the limits of any EANx mixture, and the use of EANx and oxygen for decompression.

B. Prerequisites

1. Must be qualified as an IANTD Advanced EANx diver.
2. Must provide proof of a minimum of 100 logged dives, of which at least 30 were deeper than 90 fsw (27 msw).
3. Must be a minimum of 18 years of age.

OR, if being accepted in the Program based on equivalent experience:

4. Must be a qualified IANTD or equivalent Nitrox Diver.
5. Must provide proof of a minimum of 150 logged dives, of which at least 50 were deeper than 90 fsw (27 msw).
6. Must be a minimum of 18 years of age.

C. Texts

1. IANTD *Technical Student Workbook*, or equivalent text(s) approved in writing by the Board of Directors (written approval will be issued by IAND, Inc./IANTD World Headquarters).
2. IANTD *Technical Diving Encyclopedia* or equivalent text(s) approved in writing by the Board of Directors (written approval will be issued by IAND, Inc./IANTD World Headquarters).

D. Program Content

1. All lectures and theory in the *Technical Student Workbook* up to the section on normoxic trimix and materials in the *Technical Diving Encyclopedia*.
2. This Program must include a minimum of 300 minutes of open-water run time completed within at least 6 dives.
3. Two of the dives must be to depths between 130 fsw (39 msw) and 170 fsw (51 msw). For students who need additional training dives, the remaining two dives may be in any depth between 40 fsw (12 msw) and 170 fsw (51 msw).
4. At the Instructor's discretion and as specified in the Standards, previous dive experience may be credited. The maximum credited dives from other Technical Programs (e.g., Cave, IANTD Wreck, etc.) and/or other dive experience is 4 dives, at least two of which must have been deeper than 130 fsw (39 msw). Even with maximum crediting of previous dive experience, this program must include a minimum of 4 dives, and 240 minutes of run time.
5. To complete the course within the minimum specified dives, students must have an average of 8 points (out of 10) on the watermanship evaluations. With 2 or more additional dives, the student may graduate from the course with an overall average score of 6 points.





E. Equipment Requirements

1. Fulfill all Equipment Requirements as specified in the general Technical Diver Programs overview.

F. Program Limits

1. There may be no more than 4 students per Instructor. This ratio may be increased by 2 students (for a maximum of 6 students) with an assisting IANTD Technical Diver Supervisor or Advanced EANx Instructor who is also qualified as a IANTD Technical Diver. The Instructor must be in control at all times.
2. No dives may be conducted to depths greater than 170 fsw (51 msw).
3. Oxygen partial pressure may not exceed 1.40 during the working portion of the dives, nor exceed 1.60 ATA during the decompression portion of the dives.
4. All appropriate safety or required decompression stops must be performed.
5. Decompression stops must be made using oxygen or EANx.

G. Waterskills Development

1. A confined water session must be completed before conducting any OW dives.
2. Swim with full underwater equipment required in Program for at least 5 minutes.
3. Swim in a simulated out-of-air situation (without breathing, and exhaling slowly) for a distance of at least 60 feet (18 meters) with full gear, then commence breathing. Repeat previous drill with 2 divers swimming side-by-side, but have one diver hand-off the long-hose second-stage regulator to the other diver and commence gas sharing. After remaining at rest for 3 breaths, continue swimming at an average pace for at least 10 minutes.
4. Remove and replace equipment during confined water training (doubles and stage[s]), first on the surface, then on the bottom, in less than 2 minutes.
5. Remove the harness and cylinders from a simulated- diver in less than 1 ½ minutes. (Students who exceed the time limit on this skill must have a quick-release added to their harness).
6. Divers using a quick-release on their harness or backpack must, in confined water, swim the system while the instructor disconnects the quick-release to simulate a failure. The student is to swim the system demonstrating control of buoyancy and body positioning with the quick disconnected for sufficient duration to satisfy the instructor that the student is capable of managing.
7. Demonstrate an ability to respond to a single-bladder BCD failure by the two methods listed below. (Students using gear configurations that prevent accomplishment of these two skills will be required to wear a redundant BCD. Students who already have a redundant BCD or dry suit may use one of these alternates after attempting perform the methods without the use of the alternative.)
 - a. Completely deflate BCD and swim while maintaining buoyancy control for at least two minutes.
 - b. Completely deflate BCD, ascend safely to the surface, and remain afloat for at least 3 minutes.



➤ **NOTE: If at any time the student starts to over-exert, or if it is obvious that the skill cannot be accomplished, the instructor is to ensure that the BCD is inflated.**

8. In confined water, have a student lose buoyancy by deflation of the BCD and then attempt to utilize a lift bag or other secondary buoyant device as a BCD.

➤ **NOTE: This skill is to demonstrate how effective these devices are and to reinforce that even if not suitable for a redundant BCD they still provide an option for self rescue in an emergency situation.**

9. Two divers approximately 60 feet (18 meters) apart, with blacked-out masks or eyes closed, and while simulating an out of air situation (without breathing, and exhaling slowly), locate each other (using side of pool, rail on wreck, guide line, etc. for orientation) and begin gas sharing via long hose. After taking 3 breaths at rest, continue swimming while sharing gas for at least 3 minutes. This drill may be accomplished by having one student swim 30 feet (9 meters) to donor, and repeat for other diver.
10. While two divers are swimming side-by-side, the Instructor signals one to remain stationary while the other continues swimming for at least 3 more kicks. The stationary diver then simulates an out-of gas situation by swimming (without breathing, and exhaling slowly) to the other diver and commences gas sharing for at least 2 minutes. This skill may be substituted by the instructor starting the drill at some time when the students are at apart from each other by a comparable distance as would be achieved by 3 kicks.
11. Simulate gas failure with valve shutdowns for both primary and secondary regulators. The entire drill must be completed in less than 1 minute.
12. Close eyes, remove and replace stage cylinder, make regulator switch to stage cylinder, then switch back to primary gas supply.
13. Gas shutdown at least once per dive. (It is not necessary to remove mouthpiece.)
14. Remove and replace stage cylinder on all dives with as little buoyancy change as possible.
15. Demonstrate use of a safety reel and deploy a lift bag while maintaining a stable depth.
16. Demonstrate good dive technique and swimming (SCUBA) abilities combined with correct buoyancy control.

Determine RMV and demonstrate ability to calculate and perform gas matching.

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