

12. Advanced Wreck Instructor

12.1 Introduction

Through advanced techniques, this course will instill a level of comfort and discipline allowing the instructor to conduct wreck courses with a greater margin of safety, productivity, and enjoyment. This program includes penetration skills and techniques. Depths shall not exceed the level in which the instructor is trained and competent, but in no case shall the maximum depth in this program exceed 55 Metres/180 Feet. The objective of this course is to train instructors in the proper techniques, equipment requirements and hazards of teaching wreck diving.

12.2 Qualifications of Graduates

Upon successful completion of this course, instructors may engage in wreck diving instruction provided:

1. The diving activities approximate those of training.
2. The areas of activities approximate those of training.
3. Environmental conditions approximate those of training.

12.3 Who May Teach

Any active TDI Advanced Wreck Diving Instructor Trainer may teach this course.

12.4 Student to Instructor Ratio

Academic:

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

Confined Water (swimming pool-like conditions):

1. N/A.

Open Water (ocean, lake, quarry, spring, river, or estuary):

1. A maximum of 4 students per instructor trainer.
2. It is the instructor trainer's discretion to reduce this number as conditions dictate.

12.5 Student Prerequisites

1. Minimum age 21.
2. Certified as a TDI Decompression Procedures and TDI Advanced Wreck Diver or equivalent.
3. Certified as a TDI Advanced Nitrox Instructor or equivalent.
4. Provide proof of 200 logged dives, at least 50 must be wreck dives, 25 must be wreck penetration dives.
5. Have certified 10 students in SDI Wreck Diver or equivalent.

12.6 Course Structure and Duration

Open Water Execution:

1. Six penetration wreck dives with a minimum accumulated bottom time of 100 minutes.

Course Structure:

1. TDI allows instructor trainers to structure courses according to the number of students participating and their skill level.

Duration:

1. The minimum number of classroom and briefing hours is 8.

12.7 Administrative Requirements

Administrative Tasks:

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
 - a. *TDI Liability Release and Express Assumption of Risk Form*
 - b. *TDI Medical Statement Form*

Upon successful completion of the course the instructor must:

1. Issue the appropriate TDI certification by submitting the *TDI Diver Registration Form* to TDI Headquarters or registering the students online through member's area of the TDI website.

12.8 Training Material

Required Material:

1. *TDI Standards and Procedures* Manual.
2. *TDI Advanced Wreck* Student Manual.
3. *TDI Advanced Wreck* Instructor Guide.
4. *TDI Advanced Wreck* PowerPoint Presentation.

12.9 Required Equipment

The following equipment is required for each student:

1. Primary cylinder(s):
 - a. Cylinder volume appropriate for the planned dive and candidate gas consumption rate.
 - b. Dual outlet valve or manifold required.
 - c. Labeled in accordance with TDI Standards.
2. Travel or decompression cylinders as required by dive sites.
3. Regulators:
 - a. Primary and primary redundant required on all primary breathing cylinders.
 - b. Submersible pressure gauges are required on primary cylinder(s) and travel/decompression cylinder(s).
 - c. A sufficient length hose for air sharing leading from a primary or from a primary redundant is required.
4. Buoyancy compensator device(s) (BCD) as appropriate for the open water environment.
5. Depth gauge and automatic bottom timer and/or dive computer.
6. Back-up depth and timing devices; air or multi-gas decompression computers are allowed for use as depth and timing devices.
7. Primary light and Back-up light system adequate for the overhead environment.
8. Ascent reel with lift bag/surface marker buoy or up line.
 - a. Adequate for the planned maximum depth.
 - b. Minimum of 12 kg/25 lbs. lift bag.
9. Exposure suit adequate for the open water environment.

10. Two line cutting devices.
11. Underwater slate.
12. Reels:
 - a. Primary penetration reel.
 - b. Safety reel.

Options that the instructor trainer may require:

1. Submersible dive tables
2. Bail-out cylinder with regulator
3. Jon-line
4. Compass, surface signaling device (flare, strobe, etc)

12.10 Required Subject Areas

Instructor trainers must use the current TDI Standards and Procedures Manual. In addition, the instructor trainer may use any text or materials they feel best presents these topics. The following topics must be covered during this course:

1. History of Deep Air Diving.
2. Physics:
 - a. Pressure review.
 - b. Formulas for solving dive planning problems, maximum operating depth (MOD), best mix, etc.
3. Physiology:
 - a. Hypoxia.
 - b. Oxygen (O₂) toxicity:
 - i. Whole body.
 - ii. Central nervous system (CNS).
 - c. Nitrogen narcosis.
 - d. Nitrogen absorption and elimination.
 - e. Carbon dioxide (CO₂) toxicity.
 - f. Carbon monoxide (CO) toxicity.
 - g. Hyperthermia.

- h. Hypothermia.
- 4. Decompression Option:
 - a. Air.
 - b. Nitrox.
 - c. Oxygen (O₂).
- 5. Equipment Requirements:
 - a. Redundant scuba.
 - b. Lights.
 - c. Reels.
 - d. Tools.
- 6. Procedures:
 - a. Pre-dive.
 - b. Pre-penetration.
 - c. Exiting the confined space.
- 7. Hazards of Wreck Diving:
 - a. Disorientation.
 - b. Reduced visibility.
 - c. Entrapment.
 - d. Entanglement.
 - e. Environmental.
 - f. Loss of gas supply.
 - g. Line traps.
 - h. Separated buddy teams.
- 8. Penetration Lines:
 - a. Types.
 - b. Proper use.
- 9. Research and Locating
 - a. Local regulations.
 - b. Sources of information.
 - c. Tools.

- d. Surveying.
10. Contingency Planning:
- a. Chamber locations and evacuation.
 - b. Communications.
 - c. Emergency gases.

12.11 Required Skill Performance and Graduation Requirements

All dives should be conducted with a maximum depth no deeper than the skill level of the instructor candidate.

The following skills must be completed by the instructor candidate to demonstration level quality:

1. Properly analyze all gas mixtures to be used.
2. Demonstrate adequate pre-dive planning limits based on:
 - a. Personal and team gas consumption.
 - b. Oxygen exposures at planned depths with actual mixes.
 - c. Nitrogen absorption at planned depth with actual mixes.
3. Properly execute the planned dive within all pre-determined limits.
4. Demonstrate the proper navigational techniques for the specific dive.
5. Demonstrate air sharing with a sufficient length hose through a restriction.
6. Demonstrate the proper procedures for switching and isolating a malfunctioning regulator.
7. Demonstrate the proper techniques for locating a lost penetration line.
8. Deployment of a lift bag/surface marker buoy or an up-line for decompression.
9. Silt-out procedures.

In order to complete this course, students must:

1. Demonstrate mature, sound judgment concerning training, dive planning and execution.
2. Demonstrate proficiency in every skill required in the TDI Advanced Wreck Diver course.
3. Demonstrate proficiency in teaching the TDI Advanced Wreck Diver course.

4. Present at least 1 graded presentation on an advanced wreck topic.