

11. Advanced Wreck Diver

11.1 Introduction

This course provides training and experience to competently conduct advanced wreck dives. This program includes penetration skills and techniques. Depths shall not exceed the level in which the diver 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 divers in the proper techniques, equipment requirements and hazards of wreck diving.

11.2 Qualifications of Graduates

Upon successful completion of this course, graduates may engage in wreck diving activities without direct supervision 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.

11.3 Who May Teach

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

11.4 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):

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

11.5 Student Prerequisites

1. Minimum age 18.

2. Certified as an SDI Advanced Diver or equivalent.
3. Provide proof of a minimum of 50 logged dives.
4. Be certified as SDI Wreck Diver or TDI Cavern Diver or equivalent.

11.6 Course Structure and Duration

Open Water Execution:

1. Six penetration wreck dives and an accumulated bottom time of 100 minutes.
2. Only 2 dives from the TDI Advanced Wreck course may be credited towards the total dives required for TDI Advanced Nitrox, Decompression Procedures, Extended Range or Entry Level Trimix.

Course Structure:

1. TDI allows instructors 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.

11.7 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.

11.8 Training Material

Required Material:

1. *TDI Advanced Wreck Diving* Diver Manual

Optional Material:

1. *TDI Advanced Wreck* Cue Cards
2. *TDI Advanced Wreck* Evaluation Slate

11.9 Required Equipment

The following equipment is required for each student:

1. Primary cylinder(s):
 - a. Cylinder volume appropriate for the planned dive and student gas consumption rate.
 - b. Dual valve, double manifold or independent doubles.
 - c. Labeled in accordance with local practices and/or regulations.
2. Travel or decompression cylinders as required by site conditions labeled in accordance with local practices and/or regulations.
3. Regulators:
 - a. Primary and primary redundant required on all primary breathing cylinders.
 - b. Submersible pressure gauges are required on all primary cylinder(s).
 - c. A contingency use long hose second stage should be designated and appropriately rigged to facilitate air sharing at depth if necessary.
4. Buoyancy compensator device(s) (BCD) adequate for the open water environment.
5. Primary and back-up depth and timing devices.
6. Air or multi-gas decompression computers allowed for use as depth and timing devices.
7. Light Systems:
 - a. Primary.
 - b. Back-up.
8. Ascent reel with lift bag/surface marker buoy or up-line.
 - a. Adequate for the planned maximum depth.
 - b. Adequate lift and size for the dive environment.
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.
13. Options that the instructor may require:
 - a. Submersible dive tables.
 - b. Bail-out cylinder with regulator.
 - c. Jon-line.
 - d. Compass, surface signaling device (flare, strobe, etc.) .

11.10 Required Subject Areas

The following land drills must be covered during this course:

1. Guideline Use.
2. Guideline Following.
3. Emergency Procedures.

The following topic must be covered during this course. Instructors may use any text or materials that they feel best presents these topics.

1. Equipment Considerations:
 - a. Redundant scuba.
 - b. Lights.
 - c. Reels.
 - d. Tools.
2. Procedures:
 - a. Pre-dive.
 - b. Pre-penetration.
 - c. Penetration.
 - d. Exiting the wreck.
3. Hazards of Wreck Diving and Overhead Environments:
 - a. Disorientation.
 - b. Reduced visibility.

- c. Entrapment.
 - d. Entanglement.
 - e. Environmental.
 - f. Loss of gas supply.
 - g. Line traps.
 - h. Separated buddy teams.
- 4. Penetration Lines:
 - a. Types.
 - b. Proper use.
- 5. Research and Locating:
 - a. Local regulations.
 - b. Sources of information.
 - c. Tools.
 - d. Surveying.
- 6. Contingency Planning:
 - a. Chamber locations.
 - b. Communications.
 - c. Emergency gases.

11.11 Required Skill Performance and Graduation Requirements

The student must complete the following skills during wreck dives. All dives should be conducted with a maximum depth no deeper than the certified student's capabilities.

Land Drills:

- 1. Proper deployment of guideline.
- 2. Proper technique for following guideline.
- 3. Use safety spool/reel in lost line procedures.
- 4. Use safety spool/reel in lost buddy procedures.
- 5. Proper technique for touch contact communication.
- 6. Properly analyze all gas mixtures to be used.
- 7. Demonstrate adequate pre-dive planning:

- a. Limits based on personal and team gas consumption.
- b. Limits based on oxygen exposures at planned depths for actual mixes.
- c. Limits based on nitrogen absorption at planned depths for actual mixes.

Pre-dive Drills:

- 1. Use START* before every dive.
- 2. Stress analysis and mitigation.

* START is S-drill (OOA drill and Bubble Check), Team (buddy equipment checks), Air (gas matching), Route (entry/exit and planned path underwater), Tables (depth, duration, waypoints, and schedule).

In-water Drills:

- 1. Demonstrate specialized propulsion techniques for an overhead environment.
- 2. Deploy guideline with attention to immediate environment and conditions.
- 3. Demonstrate lost line and lost buddy drills.
- 4. Follow guideline, eyes open and eyes closed, or blacked out mask.
- 5. Air share with team member(s) while exiting confined space, eyes open and eyes closed, or blacked out mask while following guideline.
- 6. Remove and replace mask while in contact with guideline.
- 7. Demonstrate light and hand communications with team members.
- 8. Demonstrate touch contact with team members.
- 9. Simulate primary light failure and deployment of backup light.
- 10. Demonstrate correct techniques for staging deco/contingency gas outside wreck.
- 11. Demonstrate proper procedure for isolating and switching a malfunctioning regulator; this drill should be conducted no deeper than 30 Metres/100 Feet.
- 12. Demonstrate ability to deploy a lift bag from depth as emergency ascent line.
- 13. Demonstrate ability to deploy a lift bag from depth as an alternative buoyancy device.
- 14. Execute simulated emergency blue water ascent with marker deployment from staged stop below 6 Metres/20 Feet; simulated or actual boating.
- 15. Demonstrate understanding of basic wreck layout and special considerations for navigating wreck.

16. Deal with diver presenting signs of serious decompression sickness (DCS) at surface; simulated emergency evacuation.
17. Properly execute the planned dive within all pre-determined limits.
18. Demonstrate the proper navigational techniques for the specific dive.
19. Demonstrate air sharing with long hose through a restriction.
20. Deployment of lift bag /surface marker buoy or up line for decompression.
21. Silt-out procedures.

Note: If required air sharing skills are completed on CCR, student may use their own offboard bailout to complete these skills at instructor discretion. Divers on CCR using a blackout mask must be able to monitor loop PO2 at all times. Refer to Section 2.7 in these standards for additional requirements when conducting this course on CCR.

In order to complete this course, students must:

1. Complete all field exercise and open water requirements safely and efficiently.
2. Demonstrate mature, sound judgment concerning dive planning and execution.
3. Satisfactorily complete the TDI Advanced Wreck Course written examination.