

TDI –Technical Rescue Diver

Introduction

The aim of the course is to take the skills already taught during your Rescue Diver course and relate them specifically to the hazards, equipment and techniques encountered during technical diving. (None overhead).

Qualifications of Graduates

Upon successful completion of this course, graduates may engage in technical diving activities as long as:

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

Who May Teach

Who may teach this course?

1. Any active TDI Technical Rescue Instructor may teach this course.

Student – Instructor Ratio

Academic:

1. Unlimited, so long as adequate facility, supplies and time are provided to insure comprehensive and complete training.

Confined Water (Swimming pool-like conditions):

1. N/A.

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

1. A maximum of four (4) students per Instructor. However, it is the instructor's discretion to reduce

Student Pre-Requisites

The student must:

1. Be a minimum age of eighteen (18).
2. Have a minimum certification as a TDI Advanced Nitrox Diver or Decompression Procedures or TDI Air Diluent CCR Diver (or equivalent) and be certified as an SDI Rescue Diver (or equivalent) with a current CPR Certificate.
3. Show proof of a minimum of fifty (50) logged dives.

Course Structure and Duration

Open Water Execution:

1. Six (6) dives are required, 2 of which may be conducted in confined water.

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 six (6).

Administrative Requirements

The following is the administrative tasks:

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the training schedule to the students.
4. Have the students complete the Liability Release and Medical history forms.
5. The instructor must review the liability Release and Medical Forms before starting on the course.

Upon successful completion of the course the Instructor must:

1. Complete the Student Registration Form and send the Registration Form to TDI HQ.
2. Award Card.

Training Material

Required material

1. Rescue Diver manual.

Optional Material

1. TDI technical Rescue PowerPoint.

Required Equipment

The following additional equipment is required for each student:

1. Primary Cylinder(s). Cylinder volume appropriate for planned dive and student gas consumption.
2. Depth gauge and automatic bottom timer **and / or** dive computer.
3. Regulator(s)
 - A. Primary and alternate 2nd stage required on all primary cylinders.

Submersible pressure gauges are required on all primary cylinders.

A. Cylinder volume should contain a minimum of 1.5 times the gas required

B. Labeled in accordance with TDI Standards.

3. Suit Inflation Cylinder (required for dry suit divers only).

4. Regulators
 - A. Primary and primary redundant required on all bottom mix cylinder(s).
 - B. Submersible pressure gauges are required on all primary / bottom mix cylinders.
 - C. A contingency use long hose second stage should be designated and appropriately rigged to facilitate air sharing at depth if necessary.
 - D. It is strongly recommended that required regulators be all DIN or all yoke.
5. Buoyancy Compensator(s) adequate for equipment configuration.
6. Redundant Depth and Timing Devices.
7. Redundant Light System if required by site.
8. Ascent Reel with Lift Bag/Surface Marker Buoy
9. Reel or spool Adequate for maximum planned depth.
10. Minimum of twenty three (23) kg / fifty (50) lb. lift bag (a dump valve highly recommended).
11. Exposure suit adequate for the open water environment.
12. Line Cutting Device.
13. Underwater Slate (for decompression / contingency tables).
14. Pocket mask
15. Oxygen Kit
16. First aid kit

Required Subject Areas

Instructors May use other training materials and aid that they feel will help present the topics. The following must be covered.

- Accident avoidance
- Risk assessment
- How to spot an emergency situation
- Dive project Plan
- Local Medical facilities
- Emergency signaling protocols (emergency buoys, drop tanks, surface supplied gas)
- Procedures when reacting to an emergency situation
- Adjusting plans to fit unexpected hazards
- Importance of buddy checks and unfamiliar equipment – rebreathers, OC twinsets etc
- Team diving
- O₂ toxicity effects
- Use of full-face masks
- Deco logistics – Support divers, surface crew, Medic
- Missed deco stops
- DCS – Type 1,2,3 & 4
- Considerations when raising an unconscious technical diver OC / Rebreather
- Reverse block
- Inner ear bend / vertigo
- In water recompression
- Neurological exam
- Oxygen administration
- CO₂ and the diver
- Panic
- Incident management

Required Skill Performance and Graduation Requirements

The following skills should be discussed prior to each dive. These would generally take the form of an initial skill practice in confined or limited Open Water with scenarios to follow during full open water dives. Scenarios should not be practiced on dives with a real deco obligation – any stops referenced in the skills below should be simulated. Typically dives should be conducted in relatively shallow water (<15 msw but no deeper than 20 msw maximum) particularly any skills that require assisting another diver with an ascent, due to the increased possibility of a fast ascent. Skills should be spread over dives to avoid multiple ascents.

Land Drills

1. Review Oxygen first aid and check operation prior to diving
2. Demonstrate familiarity with the standard Technical rig.
3. Review Team communications
4. Drills for buddy rescue
5. Properly analyze all gas mixtures to be used.
6. 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 inert gas absorption at planned depths with actual mixes.

Pre-dive Drills

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

In-water Drills

- 1.No mask ascent, supporting a diver without a mask making an ascent with deco stops
- 2.Gas sharing Ascent due to Loss of back gas or simulated rebreather failure including gas switching on ascent,
- 3.Buddy breathing decompression gas
- 4.Out of gas situation requiring deployment of a DSMB
- 5.Passing cylinders to deco divers (diver to diver)
- 6.Passing cylinders from boat to out of air diver at deco stop
- 7.React to emergency buoy (according to local protocols)
- 8.Support diver roles
- 9.Toxing / unconscious diver + lift to surface
- 10.Assisting vertigo diver
- 11.Gas switching assistance to another diver
- 12.Dealing with a panic diver underwater
- 13.No Mask out of gas 15m horizontal swim
- 14.Dealing with a simulated diver unable to manage decompression (narcois, Hypercapnia)
- 15.Unresponsive diver at the surface
- 16.Simulated diver evacuation to medical Services
- 17.DCS denial

During all dives students should:

- 1. Show good awareness of buddy and other team members through communications, proximity and team oriented dive practices
- 2. Demonstrate competence managing technical equipment whilst diving while maintaining position in the water column
- 3. Properly execute the planned dive within all pre-determined limits.
- 4. Demonstrate the proper navigational techniques for the specific dive.

In order to complete this course, students must:

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