23. Stage Overhead Diver

23.1 Introduction

This course is designed to teach trained cave and mine divers how to extend bottom times and/or penetration distance through the use of stage cylinders. Divers will learn to plan dives that may incorporate longer bottom times, complex dive planning, and multiple methods of gas management. With respect to depth, gas mixes, and required decompression, course dives will not exceed the student's current level of certification and experience level.

23.2 Qualifications of Graduates

Upon successful completion of this course, graduates may engage in stage overhead diving activities without direct supervision so long as the following limits are adhered to:

1. Penetration is limited to the 1/3 air rule, or more conservative air-plan at instructor's discretion.
2. No equipment removal in the overhead environment with the exception of the stage cylinders.
3. Students are encouraged to gain experience before attempting to plan and execute complex stage overhead dives.
4. Safety and decompression stops are completed as appropriate or necessary.

23.3 Who May Teach

An active TDI Stage Overhead Instructor.

23.4 Student to Instructor Ratio

Academic:

1. Unlimited, so long as adequate facility, supplies and time are provided to insure 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 3 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

23.5 Student Prerequisites

1. Minimum age 18.
2. Certified as a TDI Full Cave Diver or equivalent.

23.6 Course Structure and Duration

Open Water execution:

1. Students must complete 3 stage cave dives with a minimum accumulated bottom time of 90 minutes utilizing two different cave entrances.

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 4.

23.7 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.

23.8 Required Materials

The following material is required:

1. N/A.

23.9 Required Equipment

The following equipment is required for each student:

1. Dual cylinders, volume appropriate for planned dive, student gas consumption.
2. Two independent first and second stage regulators; one regulator equipped with a long hose.
3. Submersible pressure gauge.
4. Stage cylinder(s), volume appropriate for planned dive, student gas consumption.
5. Stage regulator(s) including first and second stage and submersible pressure gauge.
6. Buoyancy compensator device (BCD) with power inflator.
7. Exposure suit adequate for diving environment.
8. Mask and fins, NO snorkel.
9. Two line cutting devices.
10. Three battery powered lights; 1 primary and 2 back-ups, each with a with burn time suitable for the planned dive time.
11. One primary cave-diving reel with length appropriate for intended dive.
12. Safety reel with a minimum of 37 Metres/125 Feet of guideline.
13. Appropriate number of gap and jump reels with 15 Metres/50 Feet of guideline.
14. Computer, watch or bottom timer and depth gauge.
15. Slate or wet notes with a pencil.
16. Submersible dive tables or back up dive computer.
17. Three directional line arrows.
18. One non-directional line marker.

Instructor must use full cave diving equipment during all water exercises.

23.10 Required Subject Areas

The following topics must be covered during this course:

1. Motivations for extended time and penetration.
2. Equipment considerations:
    a. Cylinder sizes.
    b. Rigging.
    c. Streamlining.
3. Gas planning and gas management techniques.
4. Dive planning including decompression obligations.
5. Stage Diving techniques suitable for the cave environment:
    a. Dropping and retrieving of stage cylinders.
    b. Drop-off stations.

23.11 Required Skill Performance and Graduation Requirements

The student must perform the following S-drill and skills during all dives:

1. Demonstrate adequate pre-dive planning.
2. Equipment check and equipment matching.
3. Bubble check.
4. Demonstrate specialized propulsion techniques in varying types of flow.
5. Demonstrate proper buoyancy control.
6. Demonstrate proper body posture.
7. Demonstrate proper stress analysis (detection and management).

The student must perform the following in-water skills during cave dives:

1. Demonstrate proper use of stage cylinders.
2. Dropping and retrieval of stage cylinders efficiently while swimming.

In order to complete this course, students must:

1. Perform all dive requirements safely and efficiently.

2. Demonstrate mature, sound judgment concerning dive planning and execution.
3. Maintain an appropriate level of awareness and respect for the cavern environment.
4. Log all dives.

23.12 Instructor Requirements

To qualify to teach the TDI Stage Cave Diver Course, the instructor must:

1. Be an active TDI Full Cave Diving Instructor for at least 1 year.
2. Have taught at least 5 complete cave diver courses.
3. Provide proof of at least 25 logged stage penetration dives.
4. Co-taught at least 1 TDI Stage Cave Diver Course with and active TDI Stage Cave Diver Instructor.