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—*Learning to dive the Earth's interior: is it that difficult?!*

Two buddies are holding the line. The second is holding the arm of the one leading the way, communicating with him by means of touch. With visibility nil, the first buddy protects his head and face with his hand in case of contact with a wall or rock. Suddenly, for some unknown reason, the line moves and goes out of their hands. They search for it but to no effect. Their mistake: they were not holding the line properly. Will they panic? No. Their nearby instructor stops the exercise. The entire scenerio took place on dry land

Near the diving center, a guideline was stretched and positioned between some trees. Following a classroom explanation of methods and emergency procedures, the

techniques are performed on a land drill prior to their underwater implementation. The exercises enable students to master techniques, correcting and commenting on them right during the exercise. These

are often treated in the ludic fashion, allowing time to joke and relax. Zero visibility is simulated by bandages that can be easily removed, providing a very interesting learning instrument.

Is overhead diving a marginal and difficult activity?
No, not at all. In fact, it's the other way round. Along with the rebreathers, the technical discipline with the greatest

development is diving in overhead environments. While rebreather diving currently induces fewer concerns today, overhead diving remains worrying for many potential students. Many harbour groundless fears,



Learning Cave Diving

Is it difficult?



Safety drill

like getting wedged into narrow galleries, zero visibility and freezing water to name a few.

The courses take place with a minimum of several metres visibility in galleries with more than comfortable dimensions. Water temperatures vary from 13-14°C in the Lot region of France, up to 26°C in Mexico, with Croatia (18°C) and Florida (22°C) in the mid-range. In the Jura in



ing to be very demanding. The course's goal is to introduce divers to this new

environment and allow them to continue down this road in total safety. However, being claustrophobic is a definite hindrance!

What are the different stages?

The first level is Cavern, a two-day discovery of overhead diving without going deeper than 60m. Maintaining sight of daylight at the entrance allows the ideal conditions to discover this type of diving.

The second level is the introduction to Cave. This is the first level where students penetrate a cave to within 60m from the entrance point with the absence of daylight. These two levels do not involve any restrictions, complex navigation or poor visibility.

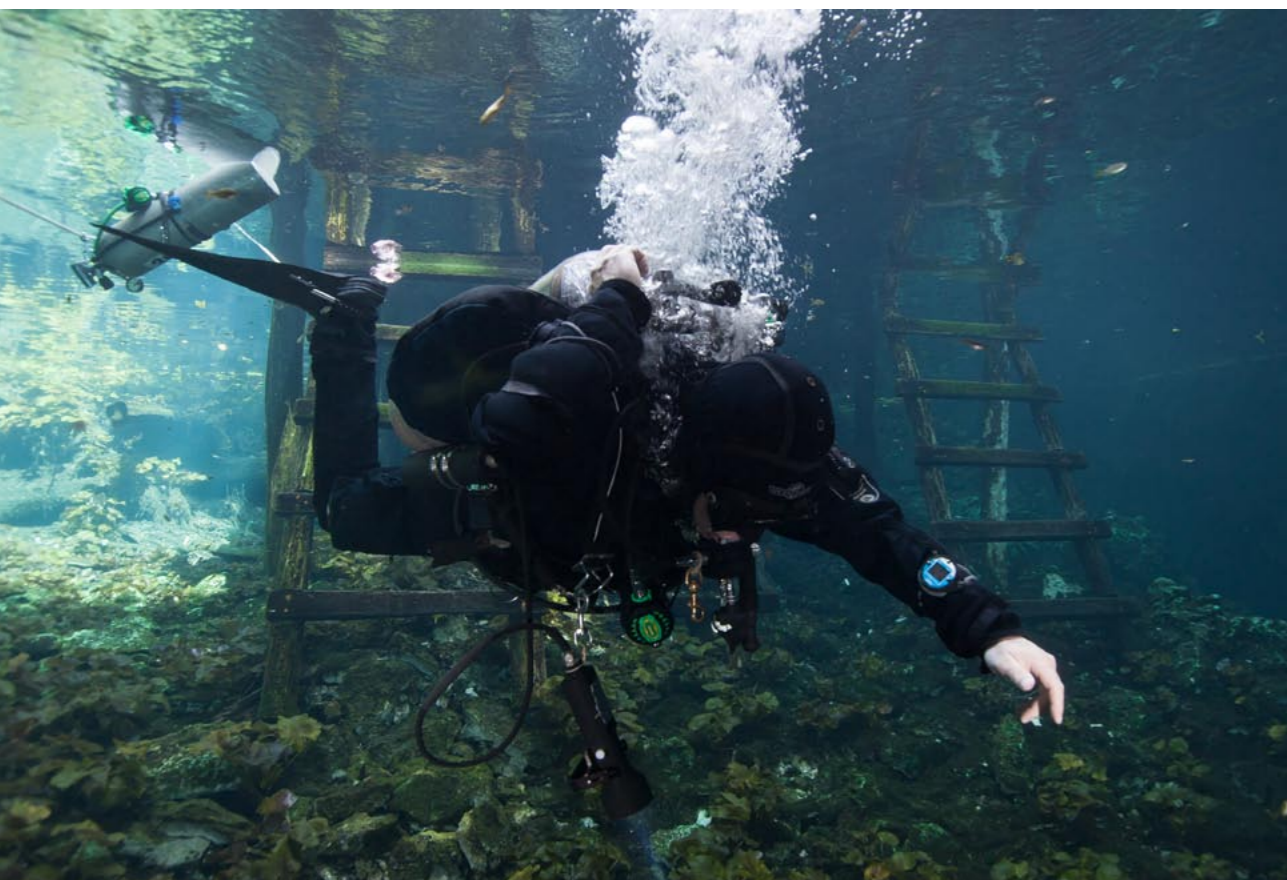
At NACD (National Association for Cave Diving) and NSS-CDS (National Speleological Society-Cave Diving Section), the next level is Apprentice cave diver followed by (Full) Cave Diver. The majority of other diving agencies have grouped these two last levels together in the final training of self-sufficient divers in the overhead environment (Cave or full cave diver), usually over four days. It is possible to make a combination of these courses

over several days or a week.

You can find this type of curriculum, originally issued by NACD and NSS-CDS, at the agencies like TDI or IANTD. These courses can be taken in open-circuit or with a rebreather. These are two different courses, and can be optionally followed by cave specialty courses: sidemount, stages, scooter or topography.

DIR agencies like GUE, UTD or InnerSpace Explorers have a slightly

different curriculum. From the very beginning, divers must pass basic skill training including Hogarthian configuration, buoyancy and horizontal anti-silting position in the water (trim), frog kick, safety drill (assisting with long hose of 2m length), valve drill (closing the valves in case of leak), team positioning during progression or communication (like a star). In this way, these skills are already mastered before the special



Leaking gas

Switzerland and northern Italy, the water is a chilly 7-8°C, going even lower to 4-6°C in the Russian Ordinskaya Cave. However, the water is generally not that

cold. A drysuit and good undergarment ensures there is no problem.

A frequent fear is the course's difficulty, with some people imagining the train-



Out of gas



Cave Diving



Air sharing and touch contact

cave training, like level 1. In the "classic" curriculum, all these skills are integrated during the course.

What cave training is about

One peculiarity of the overhead training is to use the accident analyses and statistics from the 1970s. In 1979, Shek Exley wrote his *Basic Cave Diving: A Blueprint for Survival*, a small manual of 46 pages based on real accident cases in the Americas.

This featured scrupulous analysis and the lessons necessary to avoid them. In Europe, the accident

and incident statistics were always utilized, as it was a small community. Conversely, it's a rather good method to obtain a realistic training. At present, the overhead diving instruction retains the most concise and organized pattern of all.

In most cases, the cause of most accidents is due to a diver's lack of training. This is increasingly due to executing dives that do not correspond to a diver's training (complex navigation, use of the rebreather, scooter and lack of experience in general). The first thing learned is how to deal with

the guideline, as it is the main reason or an aggravating factor in about one-third of problems. These include the absence of a guideline, lost line with minimal visibility, entanglement, how to deploy, follow and retrieve the guideline, finding the guideline in minimal visibility and to not tangle the line.

After this follow the rules of gas consumption and gas management known as the rule of thirds. Today, however, the rule of fourths is utilized, meaning a fourth on the way into the cave, a fourth

go quietly, amid the noise and haste...

[3 hours @ 20m - no deco]



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on the way out and a half for safety margin.

Then comes the depth (don't dive deeper than 30-40m with air), the equipment and particularly the lights (one primary light and two backups). Solo diving is not recommended, even if students learn how to make it out alone

in case of buddy loss and bad visibility.

During training, the students also learn how to read the place, especially in order to find the exit (rock erosion pattern, waves on sand...) and to avoid the dangers (collapses, restrictions). Communication is another

keynote, with hand signals, primary light, touch contact being employed.

Most of the basic notions are studied from Cavern to Intro to cave level. The Full Cave course covers advanced dive planning depending on the environment, decompression, navigation within



Rescue training



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Scooter diving in Orda Cave. Photo by Vitya Lyagushkin

main and secondary galleries, complex navigational elements using arrows and cookies to communicate on the guideline and locating the exit.

All these subjects are studied along with academics, land drills, their implementation in the water including emergency procedures in a team (out of gas, rescue) and in certain cases individually (lost line, lost diver).

The number of cave divers is growing consistently, with agencies offering more advanced rebreather courses and trimix in caves with TDI. Today, there is even an association fully dedicated to the cave exploration instruction—IDREO (International

Diving Research and Exploration Organization). Courses include Cave Explorer 1 level (a full cave course equivalent) and the more advanced Cave Explorer 2 level, which examines all possible cave techniques along with the options of using a rebreather and trimix in cave exploration.

Above all, comprehensive education ensures participants can safely enjoy unforgettable excursions in an overhead environment! ■

Pascal Bernabé of France holds the world record depth on a deep dive using self-contained breathing apparatus. He dived to 330m on trimix on 5 June 2005 off Propriano, Corsica. See PascalBernabe.com

Running some guideline in a land drill



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