

IS DEPTH AN OBJECTIVE?

Depth is not an objective - it is a circumstance to a given mission: visiting a particular place, exploring a specific wreck or cave, seeing a rare form of marine life, carrying on a certain project. Admittedly, the nuance may be subtle, and the border between a circumstance and a mission blurry at times. If you're taking a tec course, for instance, performance requirements define a minimum depth for each dive - how is that not a goal, since you don't meet the objective without reaching that particular depth?

The answer may lie in a somewhat broader perspective: depth is not the objective - the objective is to gain experience and mastery of skills, to assess changes in breathing rate, narcosis and equipment behavior, to develop the necessary tools for defining and executing a safe plan, as well as tackling issues, at this particular depth. In other words, in the context of a course: **you don't learn in order to reach a given depth - you reach a given depth in order to learn.**

And for that, patience is the key. Remember how, in Saint-Exupery's *Little Prince*, the hero has to tame a fox by sitting a little closer to him every day? Deep diving seems very similar to me. It's a long process involving a lot of steps, and if you skip any of those, the fox is gonna bite you real hard. The process is so long and risky that it's worth asking yourself if you really, really want to make friend with that fox, and whether fox-taming really is something for you - but if you do, and if it is, then you're definitely in for a drastic change of perspective.

When I bought my first motorcycle more than 18 years ago, the old salesman in a Parisian suburb gave me, for the same price, a bit of advice: it's sometimes good to get scared without getting hurt, because it gives a kick in the ass of both the learning and the maturing curves. What he did not tell me is that his lesson would also prove right this morning, in a Mexican lagoon, somewhere South of Tulum.

FOCUS: NOTOX PROCEDURE

One of the most common preventable causes of technical diver deaths is switching to the wrong gases for the depth (PADI Tec Deep manual) - the NOTOX procedure helps you avoid just that:

- N** - Note your name and the maximum depth on the cylinder labels
- O** - Observe the actual depth and compare it to the maximum depth on the label.
- T** - Turn open the valve. Check cylinder pressure.
- O** - Orient the second stage by pulling it from the retaining bands, and tracing the hose from the first stage to the second
- X** - eXamine team mates

There was a five to ten minutes walk over a kind of long wooden pier between the truck and our entry point. By the time we had prepared everything, and ran back and forth with the fifteen tanks necessary for the three of us on this dive, we were all drenched in sweat, and happy to jump in the water. While gearing up, I found out that the bungee holding the clip of my first deco tank on the left side was too short when using five tanks on my harness - and it took a few minutes of swearing and sweating before I was able to start the hundred meters swim around the protection nets built around the hole in the laguna to prevent swimmers and snorkelers to enter deeper waters.

Going down felt fine, and the entire descent went according to plan, starting on a Trimix 20/22 travel gas, switching around 50 meters to a more hypoxic bottom gas using a **NOTOX procedure**, and reaching our depth of 70 meters within the allotted 3 minutes. The NOTOX drill, which helps to ensure no-one breathes the wrong gas at the wrong time, is a time-honored classic, and a second nature to most Tec divers - but much in the same way that



some olympic athletes entertain some supersitious ritual on big competition days, using a particular pair of underwear or looking at a particular picture for luck, I like, after every gas switch and at regular interval, to caress the front cover of my regulator to make sure I'm breathing the right gas. G260 for the first bottom gas on my necklace, with its round purge button and sturdy metallic diaphragm retainer ; the softer edge of my S600 on the long hose for the second bottom gas tank ; the wide, flexible front cover of my good old C300 for the first deco gas, the trapezoidal shape of the insert in the R295 for 100% oxygen, and so on. By standardizing my rig and using the equipment according to a personal, stable pattern, I gain an additional possibility to check my gas switches, as well as a cheap way to satisfy my superstition.

A quick look at my pressure gauges and dive computers confirmed that everything was OK, my buoyancy and systems under control - and yet, there was not much doubt about it: my head was not working the way it should have been. My thoughts felt like the neuro-transmitters were swimming in sugar cane syrup when trying to jump over a synapse. The sediments dislodged from the overhang of the lagoon by our bubbles, which made the place look like a canyon in the middle of a snowstorm, had a bit of a trippy quality to them - but that did not explain why I felt so marked, despite the percentage of helium in my back gas having been carefully chosen to reach an Equivalent Narcotic Depth of less than 40 meters, even at the current 70 meters actual depth. Suddenly, a thought managed to emerge from my syrupy brain: carbon dioxide build-up. The triple efforts before the dive, first by walking over the pier, then by struggling with the bungee, and finally when swimming around the nets, had increased the level of carbon dioxide in my body - nothing bad per se, but at this depth, **the effect of this gas was 8 times stronger than at the surface.** I knew the theory behind it, but somehow, the not-so-uncommon level of pre-dive efforts hadn't triggered any warning in my head, having been meticulous about all other aspects of the planning.

Long, deep dives imply virtual ceilings: the necessity to do several decompression stops on the way up in order to optimize off-gasing while minimizing bubble formation and growth. I like long decompression stops, which can easily add up to hours of neutral buoyancy, for the same reason I like intercontinental flights - those are blessed parentheses, where nobody can reach me by phone or e-mail, and where idleness is a necessity instead of an indulgence. They're the ultimate "me-time", and that concept pleases both my anti-social fiber and my longing for a break in life's usual hecticness.

During the last stop, which lasted half an hour at three meters, I had ample time to review the lesson learned during the dive. In two days, we have planned a nintey meters dive along the Cantil of Playa del Carmen, a wall dropping a few hundreds meters away from the shore, where we hope to see some bull sharks on the way down - I'll definitely reduce the level of pre-dive efforts to a minimum, and won't hesitate to ask for a break before the descent if necessary.



FOCUS: PARTIAL PRESSURE & CO2 NARCOSIS

1. *Gases dissolve, diffuse, and react according to their partial pressures, and not according to their concentrations in gas mixtures or liquids (Wikipedia): in other words , the effects of a given gas on our metabolism will be proportional to the depth of the dive.*

2. *The solubility of carbon dioxide in lipids, which is an indication of how narcotic a gas will be, is 25 times higher than nitrogen.*

Conclusion: A small quantity of CO2 resulting from pre-dive efforts can induce intense narcosis at greater depths.

The fox did not bite today.

But even when it smiles at you, there's no mistaking the sharpness of its teeth.



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