

INSPIRATION vs MEGALODON

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It's already more than a year and a half that I exclusively use my Megalodon CCR Rebreather after having been the first Inspiration diver and Instructor in France, almost 8 years ago. I travelled in many different places in the world, taught quite a lot of CCR courses with both units (and since several months with the Evolution as well) and had most of the problems you can imagine or experience with all these units. I ended up with considering the Megalodon as one of the most performing rebreathers on the market, having a lot of benefits compared to the Evolution or the Inspiration. They are based on my needs and the problems some of my students encountered, but they maybe not reflect your needs or diving requirements:

- **Flexibility and transportation:** it's clearly one of the major points for me. It's possible to use any size of cylinders and to configurate them the way I want. The in-board gas can be carried on the back, de-inverted or even as sling tanks or side-mounted tanks. It's therefore possible to travel with no tanks and simply use the ones available from the local dive center. Then I clearly need to adjust my trim based on the size and material of the cylinders but it's better than having to travel with tanks just because the cover box on my YBOD doesn't provide me with any flexibility. Some Inspiration divers solved this issue by buying a DT box or a similar SS Frame, but it adds to the cost and the overall weight.

My unit (without tanks) and all my diving equipment for warm water deep diving (my favourite environment!) easily fit in a big dive bag with wheel. Because of weight limitation in an asian airline, I was even able to put my rebreather in a small trolley case I took as a hand luggage (well over the weight limits but the check-in staff didn't check...)

Flexibility also comes into consideration when it goes to actual type of diving. Depending of the planned dive profile, I simply use different tanks (and very soon a different scrubber) that exactly fit my needs (duration, depth, workload, etc).

- **Robustness:** I carried rebreathers in less than ideal environments, none of them being close to what one can call an « acceptable level of comfort » (hand carried in a dense jungle, loaded in unstable and uncomfortable boats fully packed with Tek gear, shaken by fast driven sub-standard taxis that should be in a junk yard rather than on a dirt road, carelessly handled by giant airport staff, etc). In the Megalodon, nothing breaks! As most of the spare parts could be found in a local dive shop or hardware shop, most of the potential damages could also be easily fixed. This rebreather gave me the feeling to be almost bullet-proof, even if there are still parts in moulded plastics (but those are very rugged, as some crash-test pictures on the ISC website can prove it).

- **Streamlining:** it's a clear advantage of the Megalodon over its competitors in the same category (Inspiration, Ouroboros, etc). If you decide to do it properly, everything could be much tighter and close to the body. With a streamlined rebreather, it becomes easier to swim, to go through restrictions in a wreck or a cave, or simply to dive in difficult conditions (current, depth, etc). Even the over-the-shoulder counterlungs could be tightly adjusted and become almost as comfortable as in a back-mounted rebreather. If they are low enough, the T-pieces are not in the way and I can move my head rather than my complete body every time I want to look on the side. I don't feel like carrying a 16th century suit of armour anymore.

- **Dealing with flooding:** first of all, a Megalodon diver can use the famous radial canister used in the Cis-Lunar (rather difficult to find nowadays) and ISC will offer very soon a water-resistant scrubber. These radial canisters are more efficient than axial canisters and also prevent any water in the loop to damp the scrubber material and make it useless (or even caustic, for some sodalime or lithium hydroxyde). On top of that, the design of the Megalodon allows to recover for an almost complete loop flooding, as long as the initial problem is solved (but loosing the mouthpiece is the most common problem, isn't it ?). The position of the OPV on the exhalation counterlung, along with a simple technique, definitely help to purge most of the water in the loop. The two battery compartments are waterproof to avoid any damage caused by salt water. Most of the parts are plastic coated and any water in the canister shouldn't damage the electronics that much.

- **Electronics:** since the very beginning, I like the simplicity of the APCS electronics. The O2 sensors have a two point calibration (air + O2) for a better linearity of their reading. They are not located close to the solenoid to avoid any O2 spike every time the solenoid injects some O2 in the loop. The 2 handsets (and the HUD) are really independent and some of their features are clearly interesting in technical diving:

- Depending on the type of battery used (1.5V AA or SAFT), the burn time could be impressive. I was glad to see that I can safely use some batteries on the Secondary display for more than 200 hours.
- The Head-up Display helps me to have a constant control on the cell readings. Rather than having an intelligent HUD that gives me alarms when anything goes wrong (High or Low pO2, low battery, sensor failure, etc) I prefer to read

the 3 sensors reading and use my own judgement. I found that very useful in tight restriction in cave diving, or when taking pictures.

- Two Temperature sensors (water and loop temperatures) help to have a rough idea about the efficiency of the scrubber. It's a very indirect and unreliable measurement of the CO₂ level in the loop (like the Temp-Stick for the Vision electronics) but I prefer this one as, one more time, there's no alarm and the diver has clearly to use his/her good sense.
- The built-in Volt meter is again another tool to better understand the expected behaviour of the 3 oxygen sensors and the 2 batteries.

Compared to the Vision electronics, most of the Megalodon CCRs are not fitted with a built-in decompression software (with the exception of the Smither's and the Shearwater's). I'm quite happy with that. But for those who prefer to have everything on one display, the future version of the APECS should be available soon.

- **General Comfort:** The Meg was designed from scratch as a user-friendly rebreather:

- The standard axial canister (see-through) helps to prevent channelling, one of the main sources of hypercapnia.
- In case of solenoid failure and constant oxygen injection, the reaction time is crucial. A Swagelok quick-connect allows the rebreather diver to simply disconnect the solenoid O₂ supply without having to shut the O₂ valve off. It's simple and fast. No need to play with the O₂ cylinder valve to keep a steady pO₂ level in the loop. The O₂ manual injector is more convenient to use and is a skill that each rebreather diver has to practise during almost any dive.
- All the connections for the manual injectors (O₂ and diluent) are standard Schraeder valves. No need for special connections. Everything can be easily plugged in, even LPI hose or dry suit inflator hose. This gives a lot more flexibility and options in case of emergency.

All in all, after having tried most of the rebreathers on the market and having intensively used the Evolution and the Inspiration, I'm still more than pleased with the Meg. I know that the main advantage of the Inspiration and the Evolution is the actual number of units produced. With that comes an intensive testing process and a lot of feedback from the users. With this impressive number of units in the field also comes a lot of third-part options and a better availability of spare parts everywhere worldwide. But I also found that some parts of the Evolution can easily break.

My Meg has been used by careless students and me and I can't really find any realistic complaint about this rebreather. It matches perfectly with my personal type of dives (wreck penetration, deep diving, cave diving) and I just can't wait to try the new options that should come out...