Is the Future Now?

Almost . . .

Hal Watts, a.k.a. "Mr. Scuba," enticed the inventor of the PRISM rebreather to leave England and spend a week at Hal's Forty Fathom Grotto, outside Ocala, Florida, lecturing, demonstrating, and allowing participants to dive his rebreather.

After a 2½-hour seminar rich with partial-pressure-gas theory, full of practical, hands-on demonstrations, and containing only a minimum of product selling, three of us were given a tour of the upper (50-foot) area of the Grotto with one of PRISM's products. We were all blown away — but not by the bubbles.

This was a new dimension to diving. Without the usual bubble babble emanating from the regulator's exhaust valve in front of my face, it was silent in the grotto. Silent, except for the divers; we sounded like a line of hunters beating tigers out of the bush.

The advantages of a rebreather are many. How did Howard Hall get that great footage of hammerheads? No bubbles. Decompression time is held to a minimum; gas supplies are greatly extended. The technology is here now, although it's plagued by reliability problems and high costs. The PRISM, which I was diving, is supposed to be changing all that with a possible price tag of only $3,500 and a reliability record of "I haven't had one fail yet."

PRISM rebreathers are not the electronic marvels currently in use or under development by other companies. The emphasis in most research appears to be on the deployment of leading-edge computer technology to sense depth and pressure and to use this information to blend the best mix of gases.

The PRISM rebreather is a mechanical device with no transistors, resistors, batteries, or power supplies to fail at inopportune moments. Sophisticated mechanical gates and valves deliver the required safe mixture to the diver. Admittedly, some of the valves sense pressure and convert this to small electrical impulses, but this is decades-old technology. The true genius of the PRISM is using proven, primarily mechanical technology to make a dependable life-support system. The inventor is open-minded enough to acknowledge that in the future, electronic, computer-controlled rebreathers will be the state of the art — but not until reliable components are both available and affordable.

In the simplest terms, the PRISM blends gases to supply you with oxygen at the right partial pressure for your depth — an amount that your body can safely metabolize. It lets you monitor this mix and make adjustments if the partial pressure begins to drift from preselected values, or if you become more active and need a lower oxygen partial pressure.

In your primary gas cylinders, you can have nitrox, heliox, neox, or trimix. You can select the cylinder size: 2, 3, 4, 6, or 9 liters, single or double. Use your own backpack — Zeagle, Wings, stab jacket — as long as it can accommodate a twin-cam banding system. (Even if you use only one cylinder, you must be able to bolt on the canister of absorbent.) You attach your own Class A regulator to one of the gas supply bottles to give yourself a bail-out capability in case of catastrophic system failure.

How long can you stay down? In the 200- to 300-foot range, using 4-liter bottles in the semi-closed mode of operation, you can plan on four hours. The biggest factor is not how much gas you can carry, but how long the canister of absorbent can last. These canisters are available in 2- , 4-, and 6-hour durations.

The demand to try the rebreathers far outstripped the week originally set aside. Hal Watts will be hosting the PRISM lectures and tours again mid-June through mid-August. Bring your checkbook. The units (not in production yet) are supposed to retail for under $5,000. Hal says he already has orders for 25. "The Rebreather Experience," which includes 2–3 hours of lecture and an escorted half-hour tour in the water with the rebreather, was priced at $150. You can stay in the somewhat spartan accommodations, a trailer house at the site, for $15 a night, or live in the lap of luxury in Ocala, 14 miles away, for about twice that.

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