
My Favorite Reg?

Scubapro's D400/MK20, thanks for asking

One of the two questions most frequently asked of In Depth's equipment editor is "What regulator do you use?" In case you're wondering, the other one is, "What dive computer do you use?" Here's his answer to the first question, in his usual blunt fashion. . . .

Although I have about a dozen regulators in my diving locker, unless I'm testing gear for *In Depth*, the one I've consistently packed for the last couple of years is a Scubapro D400 second stage on a Scubapro MK15 first stage. My MK15 has recently been upgraded (see sidebar) and supplanted by the MK20.

The Breathing Is Easy

First and foremost, I like its breathing characteristics, in particular at very low flow rates. Since one of my cardinal rules is to keep from working up a sweat

underwater, breathing characteristics while lying doggo are most important to me. It has minimal cracking pressure, meaning that it takes almost no effort to get it flowing, and also offers smooth, light inhalation and exhalation.

At high flow rates, it provides more air than I can use without force-feeding me as some regs do. Strongly aspirated regulators may look good when tested on a flow bench, but I hate using gear that sprays water and air down my throat. The Scubapros breathe dry and don't have a mind of their own, providing a nice, linear response. I haven't been able to overbreathe it, even inhaling as hard as I can below 180 feet. They don't feel ragged at any flow rate from sipping to sucking. Although other high-end regulators have many of these positive attributes, I haven't tested one that feels as

smooth to me at both very low and very high flow rates.

Second, I like their quick and easy service procedures. Just about any Scubapro reg on the road can be field stripped in a few minutes. Although I don't advise anyone to work on his own regulator without appropriate training, I think it's a good idea to carry along an annual service kit in case you have a problem and can find a qualified regulator technician. Some regulators require special tools, but a good technician can put a D400 back in service with a set of simple tools in less than an hour.

Finally, I really like the fiveported LP swivel on the first stage. It's the most versatile arrangement available for hose routing, though the Sherwood Maximus, with its long, underarm hose, is just as comfortable in terms of neck or mouth strain. Over the space of a week or two of steady diving, not having to fight a stiff hose makes a big difference in comfort.

Old Regs Never Die . . .

Scubapro has discontinued the MK15 first stage, though it still makes the D400; the new MK20, developed in Italy, proved less expensive to produce and easier to use and service than the USA-designed MK15. Engineered to handle up to 4,350 psi, it permits higher maximum flow rates than the MK15 and should keep more consistent intermediate pressures over time.

How do these changes affect diving? I alternated diving the D400/MK20 and D400/MK15 for a week from the surface to 181 feet, sometimes swapping second stages between the two first stages. I packed them with sand (yes, pouring it into the little holes in the side of the first-stage body)

Free MK15 HP Upgrade

There have been some reports of high-pressure seat failures in MK15 regulators used on tanks at pressures greater than 3,000 psi. The issue is addressed in Scubapro Engineering Bulletin no. 234, dated 7/94. Such failure can cause the intermediate (LP hose) pressure to rise above its

normal range of 125–145 psi. I've seen one rather vague report on the Internet describing sudden, uncontrolled free flow resulting from seat failure, but I haven't heard of any LP hose ruptures or personal injuries.

In the interests of safety, all MK15 owners should have their regs upgraded if they're used on 3,000-psi tanks, since such tanks often have higher pressures in them when first filled or after they've warmed up in car trunks or sat around in the sun. The upgrade kit (part no. 10.600.051) is a freebie, so there's no reason to put this job off. I've had the kit installed in my MK15 and can't feel any difference in breathing characteristics; it's a safety upgrade, not a performance upgrade. The kit, which replaces the HP seat and its holder and some other internal parts, allows the reg to be used up to 4,350 psi.

and left them unwashed to dry in the blazing sun. I ignored the usual advice to depress the purge on the second stage before opening the tank valve, and generally treated them as if they were rental gear at a resort.

Since most of the breathing characteristics of a regulator are due to second-stage design, I didn't expect to feel much of a difference in the two setups, and I was right. Unless I took the time to look, I couldn't tell which of the regulators I was using at any given moment. They were both smooth, and neither of them flinched under my deliberate abuse.

If you can find a hot deal on a D400/MK15 combination, don't shy away just because it's last year's model. Just get the HP upgrade kit installed before taking it home. There are still quite a few new MK15s out there on dealers' shelves, and you're not going to have any parts problems in the foreseeable future. Scubapro maintains parts for nearly all its earlier models. For instance, I confirmed that service kits are still available for the Scubapro MK2, and I haven't dived a MK2 since 1968.

Who Uses What

The Scubapro D400 remains my personal favorite among second-stage regulators, whether installed on a MK15 (upgraded) or MK20 first stage.

Delmar Mesa

Here's what some of the other In Depth staffers use, and why:

John Q. Trigger:

I jump around a lot from reg to reg, trying to get a feel for what's out there, but the piece that ends up in my dive bag the most often is US Divers' Micra.

Even though I don't like to see Cousteau's face on the box, I prefer the small size of its second stage and the way it breathes sweet and effortlessly at any

I want assurance that no matter how deep I venture, how low the tank pressure, or how hard I work to breathe, the regulator will still give me air as long as there is any left in the tank.

volume or depth that I push it to. I use it with an AirMic as a safe second — a comfortable setup. As

an alternate backup I drag along a Sherwood Maximus with a Sherwood Shadow. I like the Maximus for the same reason Delmar does, the comfort of its underarm hose, and the Shadow is a great setup for a safe second. It fits in line on the BC hose, which keeps the alternate first stage right next to your mouth for quick access in an emergency.

E. F.:

Thru the years, I've used regs made by USD, Scubapro, Mares, Dacor, Oceanic, Poseidon, Tabata, Tekna, Apeks, and Seaquest (that I can remember). They have ranged from the least expensive to the most expensive, from bare-bones basic to fairly complicated. My personal favorites have always been the regs that perform best with the least engineering. I also have never given a damn about

Did you hear that firefighters cleaning up after a recent California forest fire discovered a scorched scuba diver high in the branches of a smoldering tree? Seems as if a fire service helicopter, dipping into a nearby golf course pond, inadvertently scooped up a diver scavenging golf balls. When the copter pilot opened the water bucket over the fire, he dropped the diver on a lofty pine, where he was impaled like a marshmallow, then toasted by the fire. No doubt the most bizarre death in the history of diving. . . .

This urban (suburban? rural?) myth circulates every couple of years in supermarket tabloids, on the Internet, or anywhere it can get a life. This year it sucked in a couple of gullibles on Compuserve's scuba forum who were already keeping their toilet lids shut so that alligators living in the sewers don't jump out and nip their willies.

Or how about this story: An instructor was lecturing his students about the importance of purging their second stages before taking a breath. To demonstrate, he purged his regulator's second stage. Then, for some unexplained reason, he took a breath from his Air II — and sucked in a cockroach. He couldn't exhale it, no matter how hard he tried. It took a surgeon at the local hospital to remove it.

Well, this one's true. According to a manifest of injuries to PADI instructors, it happened in Jakarta, Indonesia, in March 1993. "Gross" is one word that comes to mind.

J. Q.

Diving Myths: Scuba-Kebob and Joe's Apartment

where the bubbles go, so I've never used that as a criterion. My two favorites today are the Oceanic Delta and the new (1996) Sherwood Magnum.

Ben Davison:

I'm a sport diver, not a technician. So I'm not impressed with regulator advertisements, because I don't understand them. My eyes glaze and my attention wanders when I'm presented with esoterica about balanced and unbalanced pistons or hype like "the most advanced and easy-breathing regulator ever."

When I decided to scrap my 14-year-old Tekna regulator — the one

that made me look like I was nibbling a chrome Polish sausage — I did just what I recommend to our readers. I read the U.S. Navy tests of regulators that we publish in these pages whenever they become available.

I want a regulator rugged enough to work properly after getting banged around on long trips. But I also want assurance that no matter how deep I venture, how low the tank pressure, or how hard I work to breathe, the regulator will still give me air as long as there's any left in the tank.

To me, these are the variables that separate one regulator from another. They are the variables

that require independent confirmation, not manufacturers' hype.

The U.S. Divers Micra exceeded all the standards of the U.S. Navy Experimental Dive Unit, all the way down to 198 feet, and that's why I bought it.

I thought about a comparable Scubapro model that tested about the same. But the price tag on the Micra, on sale for roughly half the Scubapro price, made it an easy choice.

So I'm a happy mouth breather, knowing that when I get too deep and too carried away with the big-fish action, my regulator will deliver until I come to my senses and head homeward. ■

Where the Fish Are

Have fun and help science

If you're a fish freak and want to know which reefs in the wider Caribbean have the most species, we've got the answer for you — and it's bound to be a surprise.

The Reef Environmental Education Foundation (REEF), founded by Paul Humann and Ned DeLoach, has trained and used volunteer divers to census fish species and populations in several areas of the Florida Keys (Key Largo, Islamorada, Marathon, Key West, and Dry Tortugas) and compare them with those in the Dominican Republic, Grand Cayman, Bonaire, and Belize.

In Florida, as you might imagine, the greatest numbers of species recorded were in Key

Largo (205 species), followed by Key West (174), Islamorada (173), the Dry Tortugas (162), and Marathon (151).

Parrotfish were the best represented in the Keys, groupers the least. The grouper population was highest in Key Largo, where there's no spearfishing. Artificial reefs may help preserve some species: in Islamorada, jewfish were seen only at the artificial reef.

One interesting finding is that 20 percent more species were observed at sites with greater diver visitation than at those less visited. However, species such as the great barracuda and purple reef fish were found only at less-dived sites.

And the winner? The Florida Keys, with 242 species, followed by

Bonaire (211), Belize (211), Dominican Republic (Parque Nacional del Este — 168 species), and Grand Cayman (157 species). Overall, parrotfish were the most widely represented species and groupers the least. Yellowtail snapper and redband parrotfish were the most abundant, while great barracuda and purple reef fish were the least abundant.

REEF conducts fish surveys to document changes in coral reef communities. You can join the census by contacting REEF, at 305-451-0312, for further information.

There's one more trip scheduled this year — a field study of Bimini's reefs October 26–November 2. The cost is \$800 for accommodations, air from Ft. Lauderdale, diving, and REEF course and materials; meals are not included. Call REEF at the above number or Scuba Bimini at 800-848-4073. Only a few spots are left, but 16 trips for next year will be announced soon. ■