

For three days I had to have my arm held over my head in a sling, so that gravity could assist in the relief of pressure. I recovered fully within a week or two. Never again did I wear another gauge on my wrist. I don't have to point out the obvious moral.

Billy Campbell has devised an ingeniously simple solution to this problem: a PVC wrist console. He glues a short section of pipe to the inside of his drysuit sleeve, between the wrist seal and elbow. It is fat enough to slide his fist through, strong enough to strap his gauges to, and does not compress or distort with depth. His arm never gets pinched and his gauges do not come loose.

What features are essential for decompression computers to have? The single most important piece of information that should be displayed at all times is the *total* decompression time required before you can break the surface. Only by watching the minutes mount up can you make an informed decision about how soon to leave the bottom.

Some computers show only your ceiling; certainly, seeing that your first stop is at 50 feet is a dead giveaway that you're in for a long hang, but it's not as effective as reading sixty-six minutes to surface. Ceilings alone merely offer a framework that keeps you guessing throughout the dive as well as throughout the decompression. I once made a 250-foot/20-minute dive using one computer brand that read ceilings only. With the first stop at 80 feet I knew I was facing a long one. Like the Navy Tables, each successively shallower stage required more hang time than the last, until I reached the 10-foot stop where the ceiling readout flashed for so long that I was sure the computer had hung up. It was like decompressing in a timeless limbo. It took forty-five minutes to clear the 10-foot stop, during which time I did not know if the computer was functioning properly, never knowing how much decompression remained, and did not have the necessary information to update my situation and plan for contingencies such as short air supply.

Even with a model that displayed total decompression time I had a similar experience. Diving the *Monitor* at 230 feet, I watched the minutes climb into the seventies, eighties, and nineties. When I left the bottom after twenty-five minutes (the wreck has only fifteen feet of relief) my first stop was ninety feet, and the total hang time displayed was ninety-nine minutes. Again, I thought the computer had hung up because, although the ceiling depths dropped, the time-to-surface display remained on ninety-nine—and it stayed that way for forty minutes. Why? Because the readout panel has room for only two digits. The computer was calculating my decompression accurately, but it had no way to display the data until the time reached the double digits. Not until the number dropped to ninety-eight minutes did I realize the extent of the decompression awaiting me. After one hundred sixty-five minutes I came out of the water a prune.

One thing not explained in the instruction manuals is the consistent inaccuracy of the total ascent time readout. Since the time to surface is



It is easier to decompress on your own than to share the line with others who want to be at the same depth.

calculated on a "pure" ascent (at the precise rate and stopping at the exact depth on which the mathematical model is based) no account is taken for variations on the theme. Time is added if your ascent rate is too slow and if you stop at a depth deeper than that prescribed. I have found that the exact ascent rate is difficult to maintain due to the difference in the scope of the anchor line from one dive to the next.

Also, in practicality, you won't be able to decompress exactly at the ceiling depth. If you rise only one foot above it the computer either stops counting down your decompression time, or, after too long, goes out of range because you exceeded the proper ceiling. This means that you must stay right on the money in order to follow the program accurately. This is impossible in rough seas, against a stiff current, and while hanging onto a slanted, often jerky anchor line with a bunch of other people. Your only choice is to hang deeper; but then, the computer adds on time because of the increased depth.

If you compare the second sweep of a watch, or the computer's running time readout, with the countdown display, you'll see that the countdown minutes are longer than sixty seconds. Thus, when you settle in for decompression, you'll find that the total actual time you spend clearing the computer exceeds the total predicted time. Furthermore, I've noticed that although a decompression computer supposedly takes ascent time into account when giving you to total predicted time on the bottom, it rarely does so on deep dives—presumably because you (and it) are still tacking on