LETTERS TO THE EDITOR

CAGE IN A STUDENT DIVER

Telita Cruises
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11th October 1991

Sir

I was very interested to read of the case of CAGE suffered by a diver making a giant stride entry reported by Robyn Walker.[1]

The victim may or may not have been overweighted, but this is largely irrelevant to the cause of the problem. Although extra weight adds to the kinetic energy of the diver before hitting the surface, the percentage increase is negligible, and even an unweighted diver can easily penetrate the surface to a depth of one metre, especially if the entry is from any height or the feet are brought together before hitting the water (as trainee divers often do by mistake, and experts, do deliberately).

Once in the water the victim was obviously POSITIVELY buoyant and since the injury was on ascent, this is where we should look for the cause. Why, why, why are student divers taught to enter the water with air in their buoyancy compensators? I have been fighting against this practice for years for various reasons. It seems as though I have just found the most serious one yet.

Many divers and diving instructors have a "surface fixation". They imagine that in order to go diving they first have to flounder around on the surface, usually struggling to get the air out of their buoyancy compensators that they put in a few moments before. All briefings should, of course, be completed before the entry. If a camera is to be passed or a buddy contacted this can be done at the surface, or preferably just below, without any air necessary in the BC. If a diver is overweight, and I read that the victim had already made two training dives the day before so certainly should not have been, then a little air to correct that situation can be added underwater.

Divers should NEVER enter the water with air in a buoyancy compensator. I must admit that this was much easier to teach, to men anyway, in the old days where BCs had crotch straps. If for any reason they need air in the compensator they should put it in after entering the water, and then with GREAT CAUTION.

It still amazes me that divers do not understand what potentially dangerous devices buoyancy compensators are. We are so indoctrinated that they are for SAFETY that we do not see that there is a price to pay. The American Academy of Underwater Sciences, in their recent symposium on Ascents, noted that in over half of the cases receiving recompression treatment an "out of control" ascent was involved. Although not specified, most of these would appear to be divers who have put air into the BC at depth and failed to bleed it on ascent. Although the BC does solve some problems, it introduces others. Perhaps it makes diving safer, I wear one, but who knows? Some people argue that having a gun makes life safer for them too. One thing I am certain of is that if buoyancy compensators are to be encouraged, a lot more thought is necessary on how they should be designed, used and taught.

Finally, because people can see the surface of the water but not what is beneath it, the surface has become a psychological barrier as well as a physical one. The surface has proved to be the most dangerous place for a diver. Divers need to learn to feel WELCOMED underwater but to AVOID the surface, passing through it as briefly and efficiently as possible in both directions.

Bob Halstead
BSc, Cert Ed NAUI

Reference

1 Walker R. Student divers, a population at risk; two case reports. *SPUMS J* 1991; 21 (3):130-133

DCS IN 77,680 SPORTS DIVES

Ocean Tech
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July 17th 1991

Sir

Thank you for your recent letter; it caught me just as I was departing for a month long expedition at sea to film whales. I have rushed off this reply and enclosed a copy of my complete paper as it was submitted to the American Academy of Underwater Sciences for their conference on multi-day repetitive diving held at Duke University this March.

You are welcome to reprint any portions of it or this letter. All I ask is that the material be credited to me and my company Ocean Tech.

You will note that the paper goes into more detail than the excerpts that Undercurrent ran and includes a sampling of some case histories we treated. Due to time constraints of my ship sailing (I am the captain) I simply do not have more time right now to expand my offering to you. However, I would be happy to in the future when I get back. But for now I would suggest using what I sent.

As you have noted, we were firmly convinced that slow ascents and long safety and/or decompression stops played a major role in our low incidence of DCS. This was accomplished by careful orientation and tactful correction after in field observations. I have found that sport divers react best to such methods as opposed to confrontation or scolding. For learning to be effective, both the teacher and the student have to respect each other. We made every effort to win our diver's confidence and trust to make them a willing partner in safe diving. Foremost in accomplishing this was not to lecture them on supposed depth limits. We have also found that attempting to enforce depth limits on experienced divers promotes hostility and rarely discourages such actions.

Instead we recommended 130 fsw (39 m) as a guideline and then left the decision to the divers. We never had any accidents associated with depth.

We also made it clear that there would be no stigma attached to reporting symptoms. Denial of DCS is the biggest problem in divers and has been fostered unintentionally by so-called diving industry leaders who have branded DCS cases as examples of how a diver "screwed up". We offered the premise that DCS is a statistical inevitability and even a diver who did everything "by the book" could still get hit. As our one year survey shows, 5 of the 7 cases we treated were "undeserved" hits (within table limits).

I credit dive computers primarily with helping divers to keep better records of their repetitive schedules and eliminating the errors generally associated with such computations. Significantly, over 50% of our survey group used computers and we registered zero DCS hits in that group. Computers also tended to make divers observe the 30 fpm ascent rates since they were programmed to warn the diver of fast ascents if that rate was exceeded.

In the case of our staff, we all used computers and had no problems. In my case, I did as many as 12 to 15 dives in one day routinely on the third day of diving due to the location of our best dive sites. It was necessary to place the anchor by hand and retrieve it by hand for environmental protection reasons and this obviously required the dive leader to make three times as many dives as the core group. (1 dive to set the anchor, a second dive to lead the group on their tour, and a third dive to retrieve the anchor). Our schedule typically included 4-5 dives on this day. None of the staff or myself ever had any problems. In the one year period, I logged at least 623 dives and probably missed counting another 100 or so because they were short or involved routine work setting permanent moorings etc.

To my knowledge, my survey is the largest ever recorded. Hopefully, similar record keeping may be accomplished in the future.

Bret C. Gilliam
President, Ocean Tech

We will be printing the article referred to above in a later issue of the Journal.

NITROX DIVING

Fun Dive Centre
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1 November, 1991

Sir,

I read with interest your comments in the editorial of the July-September 1991 edition of the Journal, that it was only a matter of time before enriched air (nitrox) recreational diving arrived in the South Pacific. Once again your crystal ball has proved highly accurate.

Early last month, the first recreational enriched air (nitrox) diving course was held at the Fun Dive Centre, Sydney. The six (6) successful students were certified by the International Association of Nitrox Divers, a nitrox certification agency formed in the USA by Mr Dick Rutkowski.

Dick Rutkowski, you will recall, in conjunction with Dr J Morgan Wells, introduced enriched air (nitrox) diving into the US Government agency, the National Oceanic and Atmospheric Administration (NOAA), in the late 1970's. Under Dick's fatherly eye, the International Association of Nitrox Divers (Australia) has been recently formed in Australia with Dick in the chair as Director of Training.

To meet the expected demand for enriched air (nitrox), the Fun Dive Centre recently installed the first mixing and filling panel for recreational diving in Australia. The panel was designed and manufactured for the Centre by High Tech Divers, a Sydney group specializing in enriched air (nitrox) and "special mix" recreational diving. Enriched air (nitrox) is only first step in the imminent recreational diving revolution.

As you stated in your editorial, "the diving medical and instructor communities must be prepared to cope with its arrival".

Rob Cason