

The names, dates of birth and insurance numbers were passed to the representative, but this was insufficient to activate a recovery program and eventually the insurance documents were faxed to Melbourne. The matter was further complicated by one of the divers stating that his insurance was with an American company, Diver Alert Network (DAN), however he was also insured with the same Melbourne company as the other two divers. It was not until 1545 that I was informed that a pressurised aircraft would be leaving from Melbourne later that afternoon.

In the meantime a tele-conference was held with a representative of the insurance company and a doctor from the hyperbaric unit in Melbourne and a further tele-conference was held with DAN and their medical officer in the United States. As the airstrip at Santo normally closes at 1900, the acting medical superintendent drove to the airport to keep the control tower operational until the relief plane had arrived.

The medical team arrived at about 2345. The three divers, all on oxygen, were put in an ambulance where they waited for one hour as the medical relief team waited on a call from their Melbourne office. It was not until 0110 that the ambulance drove off to the airport. The time between the incident and the departure for Sydney was therefore about 16 hours. The reason they were sent to Sydney was due to the chamber nominated by the insurance company and the relief team.

The message to all divers outside Australia is that they should be careful to check with their insurance companies, before departure, as to where they will end up in the event of a diving accident. Obviously if one is diving in the northern Pacific region the closest chamber would be Townsville and the shortest distance for the aircraft to travel would also be Townsville or Cairns.

Fortunately all three divers recovered completely from decompression sickness as did the diver his near drowning. They returned to Brisbane, in a pressurised aircraft, four days after their admission to the hyperbaric unit in Sydney.

About two weeks after we left Santo two apparently experienced divers entered the SS President Coolidge at engine room level, became disorientated and were drowned. Their bodies were recovered the following day.

William Douglas

Key Words

Death, decompression illness, diving accident, legal and insurance, letter, rescue, transport.

DIVING FOR THE DISABLED

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Dear Editor

I would have to disagree with a number of comments made by Dr Marwood in his letter to the Editor.¹ First, "political correctness" has nothing to do with the struggle of minorities to find some measure of equality in our society. Secondly, those with physical disabilities have been among the last to seek redress from discrimination. This has been difficult because not only must we accept them as our human equals but in some cases we must make physical alterations in the environment to accommodate them.

Dr Marwood is concerned about a diver with a physical disability being paired with him or another able bodied diver in case a rescue is needed. At the Open Water level, even able bodied students are only taught basic rescue skills such as air sharing. This is a skill that must be performed adequately for anyone to receive certification. More difficult rescue procedures are reserved for advanced courses. Certainly, if one is paired with an individual, able bodied or otherwise, on a dive boat and there are reservations about that person's ability to perform the dive safely, then one has the responsibility to bring that to the attention of the divemaster. If one is uncomfortable being paired with a person with a physical disability, ask the divemaster to be paired with someone else.

The impression is given by Dr Marwood that paraplegics or double amputees are unsuitable buddies. What is overlooked is that these individuals, especially if they are wheelchair bound, often have tremendous upper body strength. Further, to go to the trouble of getting certified, they are usually extremely well motivated and have practiced their skills more diligently than the average dive student. The person who has a C-card but has not been diving for five years or the spouse who reluctantly took a scuba course would probably be a worse buddy than a disabled person who has kept in shape and dives regularly.

Dr Marwood suggests that a new level of qualification be recognised. Such a system has been adapted by the Handicapped Scuba Association (HSA) but it does not necessarily solve the problem. Consider those individuals who were fit to dive at the time of their training but subsequently developed a medical problem. It is safe to say that not everyone who has developed seizures, chronic obstructive airways disease, poorly controlled diabetes or even cardiovascular disease has thrown away their certification. In addition there is a growing group of divers who were certified and then sustained an illness or injury which led to a physical disability.

Certifying a physically disabled individual requires some extra work for everyone involved. It is important for the potential diver to discuss it with his physician. It is also important to search out a dive instructor who has expertise in training those with disabilities. Further, a discussion between the physician and instructor would be likely to prove beneficial.

As an instructor with HSA and a specialist in Physical Medicine and Rehabilitation, I can say unequivocally that there is no greater joy than seeing the sheer exultation on the face of a person who has left a

wheelchair on the boat and experienced a freedom of movement that they had never thought to regain.

Terry J Brown

References

- 1 Marwood J. Diving for the Disabled. Letter to the Editor. *SPUMS J* 1996; 26 (4): 244-245

Key Words

Disabled, letter, training.

BOOK REVIEWS

BASIC DIVING PHYSICS AND APPLICATIONS

B R Wienke. Pp 320, illustrated, indexed.
Best Publishing Company, PO Box 30100, Flagstaff,
Arizona 86003-0100, U.S.A.
Price from the publishers \$US 14.95. Postage and packing extra.

Key Words

Book review, physiology and diving theory, mixed gas, thermal problems.

For those readers expecting a leisurely sojourn through basic diving physics, be afraid, as basic in the title refers to fundamental, and a run through the various chapters reveals a preponderance of mathematical formulae that would test even a 2nd year science graduate.

Bruce Wienke is a well known and respected scientist, who works in Los Alamos National Laboratory as Director of the Advanced Computing Laboratory. He has written extensively in the diving science literature, and is one of those people who seem to excel in all they attempt. He advises to DAN, Scubapro, owns a dive store, is a dive instructor trainer and national ski racing coach. However, as sometimes happens, such gifted people fail to recognise the intellectual limitations of others! This book unfortunately is a case in point.

The aim of the book, as stated by the author, is to target the dive instructor, hyperbaric technician, doctor, physiologist, chemist, and engineer amongst others. The author assumes that readers will know a large amount of theory before they read this book. Perhaps in the United States these groups have a similar exposure to physics. But this is not true of Australasia where these occupations are educationally diverse.

As a monograph the text tends to have a uniform style, has a few line illustrations, and many boxed

examples. The initial chapters look at mechanical interactions, thermal interactions, pressure and density effects, gas and fluid kinetics, dissolved phase transfer, and free phase transfer, as an introduction to the following sections on compression and decompression, diving protocols and mixed breathing gases. The final sections on electromagnetic interactions, biophysics and modelling issues, statistics, geophysical and marine phenomena and supercomputers are included to illustrate the scope of mechanisms that allow the various mathematical models of bubble formation and DCI risk to be formulated.

The sections on the decompression models and diving protocols are by far the easiest to read, and relevant to the majority of interested divers and doctors. This section is pre-empted by the chapter on free and dissolved phase transfer which nicely clarifies diffusion and perfusion limited models, nucleation, cavitation and micronuclei. Having said this, there are many other diving textbooks which also describe these topics and Wienke's book does not offer any advantage over these standard texts. Although meant to be a book on basic diving physics, the author digresses into all fields of science. The section on compression and decompression includes "maladies", inert gas narcosis, pulmonary oedema etc. These are dealt with in a basic way, are simplistic and are out of place in such a book.

This book may serve as a valuable research reference text to those interested in fundamental diving physics, but its emphasis on mathematical derivations, imaginary numbers, partial differentials, operators, and other advanced mathematical descriptors mean that its readability is far from universal. Whilst there are a few titbits of information in general reading, the text fails to flow freely, is too specialised and lacks appeal to the majority of the target audience.

Michal Kluger