

to occupational risk and hence to produce information to aid the diver in reaching decisions about his health and work.

- 3 A belief that there should be a balance between the risks of radiation and the benefits to be gained by the diver and hence that radiography should be the subject of counselling and informed consent.
- 4 Our understanding that the incidence of disabling osteonecrotic lesions is very low. Lesions are particularly rare in the air diving range
- 5 Whilst the detection of a lesion has no influence on the likelihood of other future lesions the continuance of diving of the same kind may lead to other lesions. The disabling effect of a lesion (if juxta-articular) will naturally be increased by the development of disease in other joints.
- 6 That the removal from diving work of a diver with established osteo-necrotic disease does not arrest the progress of that disease and further that the condition is not amenable to currently available treatment.
- 7 In diving, lesions of the shoulder and hip greatly exceed those in the knees.
- 8 Finally, that the finding of a bony lesion at the pre-employment stage would not necessarily, of itself, preclude diving.

We therefore recommend that the practice of **routine** pre-employment long bone radiography should cease. Similarly **routine** radiography prior to Part I, Part III or Part IV training should also cease. However, radiography of the hips and shoulders and knees should be carried out before the commencement of Part II training and of the hips and shoulders at intervals thereafter whilst the diver is still engaged in mixed gas or saturation diving.

Factors in the decision would be those currently advised in MA1 Para 40 subject to the clinical judgement of the examining doctor in the light of the diver's history and the results of clinical examination. Radiography may be advised on clinical grounds in situations other than those described.

If radiography is not judged necessary on other grounds, it should be repeated at intervals of 5 years during a diver's career.

The decision to radiograph the long bones should be the subject of agreement between the diver and the examining doctor - that is to say the diver should give his or her informed consent.

Examining doctors would retain the right not to issue a certificate of fitness if they felt that radiography was of crucial importance to their decision on fitness in any particular case and the diver would not agree.

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## HIGH TECH DIVING

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28 April 1992

The Editor,

I read with interest the editorial "High Tech Diving" by Dr Des Gorman in the January-March 1992 (Vol 22 No 1) issue of the SPUMS Journal. I would like to point out that two statements made by Dr Gorman are inaccurate and likely to lead to misinterpretation of the High Tech Divers' intentions, thereby damaging their credibility.

Dr Gorman's statement that this group "plans to use scuba apparatus and oxygen-helium, perhaps trimix, gas mixtures to dive beyond 50 msw, and according to some press releases, as deep as 200 msw" is incorrect. The above-mentioned High Tech Divers have never expressed intentions to dive to 200 msw, nor have they planned to do so on open circuit scuba equipment.

Dr Hamilton's association with High Tech Divers in Australia as so far been limited to discussions about producing decompression tables for a 82.75/17.5 heliox FGG111 semi-closed circuit dive to a maximum depth of 325 fsw (95 msw) for a maximum of 40 minutes. Dr Hamilton has agreed, in principle, to do so.

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The Editor,

Des Gorman's entertaining editorial assumes that all high tech diving is oxy-helium or trimix diving, and uses cases of disastrous experiences with these gases to justify SPUMS campaigning against recreational high tech diving. However "Technical Diving", as it is more commonly called, is more likely to manifest itself by recreational divers using enriched air, not oxy-helium or trimix, and also includes the wonderful and dramatic dives, using air, that were recently made in caves in Western Australia. Is SPUMS going to campaign against these as well?

Dr Gorman is completely correct that risk acceptance must be preceded by education, and the recreational diving industry has already devised courses for this purpose, highly responsible of them, surely. However some of his other comments had me in stitches. "Recreation should be fun" indeed, does SPUMS think perhaps that ADVENTURE

should not be a part of life? Fun to me denotes some frivolity, and I believe that the phrase "Diving is Fun" has done enormous damage to recreational diving. As you well know, all diving requires a disciplined and responsible attitude. Promoting diving as fun attracts the WRONG people to diving classes. But the real corker is the comment about the "psychology and mentality involved" in undertaking high risks. I agree that the vast majority of diving "accidents" are caused by a failure to recognise, or a decision to ignore, the real risks of a dive, a condition I call "stupidity", a common mental state. It could be a function of low intelligence but is MORE OFTEN DEMONSTRATED BY THE CASUAL ATTITUDE OF DIVERS WHO THINK THEY ARE HAVING FUN (like going to a party) instead of being serious about the dive. Ironically this is a condition THAT IS COMPLETELY IGNORED IN YOUR DIVING MEDICAL publication included in the same issue.

I note that Dr Gorman writes that SPUMS will not oppose any government who consequently legislates some limit on (high tech) recreational diving. I am one of those Australians that he mentions, that believe I should have freedom of choice and no Government intervention, and I am quite prepared to pay my own way, as long as those injured in other adventure or sporting activities do the same. The reason I oppose any legislation is that the vast majority of regulations assume that I am either criminal or stupid. It is about time that some recognition be given to the fact that there ARE stupid people who should not be diving or whose diving should be limited to very low risk dives. Then there are others who can learn and who will be able to conduct safely dives of a much higher risk. Education is preferable to legislation. I am admitting that some will not benefit from the sort of highly technical programs that will be necessary, so why not exclude them instead of everybody? The first place in the screening process is the diving medical, why has stupidity been ignored? SPUMS is vitally concerned with physical fitness to dive, are you not concerned about mental fitness as well? Is this too hard for the diving medical community? Are psychological tests excluded? What about intelligence?

SPUMS believes that all candidates for diving should have a medical examination by a physician qualified in diving medicine. The rest of the world (or almost) believes that the diving instructor has the ability to make the first determination, from a questionnaire, as to whether a prospective student is medically fit to dive and only if some contraindication is indicated on the form does the instructor refer the candidate to a doctor. If SPUMS believes that instructors are not qualified to make this determination, well that is fine with me, BUT, at the end of the course the instructor is expected to make an evaluation of the mental state of the candidate. NAUI, to its great credit, uses the phrase "would I let my loved ones dive with this student" as a final determination as to whether the diver should be certified. Nevertheless instructors are really not qualified to determine a prospective diver's mental state.

Having the "right stuff" for diving, and ESPECIALLY Technical diving, is not only a question of physical fitness but also of MENTAL fitness. All legislation does is restrict the lives of those who do have the special abilities necessary for SAFE participation in higher risk activities. Higher risk does NOT necessarily mean greater danger. It does mean that more ability and training is required. Arbitrary limits, such as the 40 m "safe depth limit" are an insult to intelligence. Many divers are unsafe at 10 m !! Are ALL divers unsafe at 41 meters? Why do the Project Stickybeak reports never have any reference to the IQ or the pre-dive mental state of victims? Is this a plot to ensure that intelligent people are not allowed to do anything in their leisure time that a stupid person cannot do? I put it to you, seriously, that SPUMS has ignored the mental health aspect of fitness to dive. Can I have a response please, from anyone?

I do not believe that any of my 6,000 odd dives have been dangerous except as I note in the next paragraph. The reason is that I have assessed the risks carefully and, to the best of my ability, knowledgeably, and have only dived where I was confident that I had the skills and knowledge necessary to overcome the risks and make the dive safe. The reason for my assuming the risks, is NOT the risks themselves, but because I LOVE the underwater world. I have an enormous desire to see what and how creatures live their lives 100 meters down. The reason I have not seen them is because I do not have a way of overcoming the increased risks of being that deep. But if technology produces a means for me to do this, so that I am satisfied that the dive is safe, I will be there. If you really have to pass laws to save the public purse why not try to ban smoking or anal sex? Or, even better, pass a law banning regulations. Then we could put the bureaucrats on the dole where they will do less harm and earn a wage more appropriate to their abilities, and really save money to spend on new hyperbaric facilities? It's all right, I know the answers, but can we spare diving please? I am in favour of better screening of student divers, of much better, and graded, diver education and training, and probationary periods for new divers. But always EDUCATION never LEGISLATION.

Some of the risks that are very hard to determine are those forced on me. If I dive in Queensland, Australia, by legislation I have to dive with a buddy who may be unknown to me. The dangerous situations I have been in underwater were ALL caused by other divers. A recent survey I conducted revealed that MORE (experienced) divers were put into dangerous situations BY THEIR BUDDIES than were "rescued" by them. Legislation is NOT the answer to ANY of diving's problems. In fact I have to wonder at the psychology and mentality involved with those that propose it, or those that do not actively oppose it.

Bob Halstead