

dive boat with mask up on his forehead. He was alone and was seen to wave twice, then submerge. Water conditions were calm. These events were observed and a search was initiated. He was reached within four minutes of his disappearance and on the boat within six minutes. Both the store employees on the boat were trained in CPR, which was immediately begun. The Coast Guard, with two paramedics, arrived sixteen minutes from the commencement of the incident. The victim was noted to have air remaining and to have neither inflated his buoyancy vest nor dropped his weight belt. No details are known about the dive or the buddy's version of what had occurred, but this sounds like a classical air embolism fatality following a panic type ascent, "topside" having done everything reasonable. But the deceased's relatives thought than a lawyer could make their loss bearable and summonses were issued.

The claim was made on a number of grounds, consideration of which could be salutary to everyone in a position of responsibility in a diving situation. The dive shop in this fatality appears to have an excellent defence (and insurance to pay a good lawyer!), but nevertheless the charges were made viz, that they failed to instruct the deceased in the proper procedures for scuba diving, failed to determine whether prior to the incident he was competent to perform the dive in question, failed to properly instruct the deceased AND HIS DIVING BUDDY as to the procedures of the "buddy-system" when one diver is in trouble, and failed to properly instruct the employees on the boat as to the proper supervision of the divers from the boat to determine if they were in trouble. It was charged that there was also failure to rescue the diver when he was in trouble and failure to maintain the equipment of the deceased and of the others. This is known as a blunderbuss charge, fired with the hope that some chink in the defence will thereby be discovered. To add to the entertainment, the buddy was sued also. He was charged with "the duty to use due care in observing the location and condition of his diving partner and breaching the duty when he failed to observe than the deceased was in desperate trouble". The dive store is expecting to present a successful defence, but the buddy is less well placed if such a charge is pursued, the cost in cash and worry being high even if he should be exonerated. Perhaps he should counter claim against the estate of the deceased for being put in personal jeopardy himself and for the mental stress, etc. caused by the litigation. As it is said to be cheaper to kill than injure on the roads of the USA, he just might come out on top. It is mind boggling to try to imagine the dive conducted in accord with total legal safeguards. One would never dive except alone with one's own apparatus made by oneself, as would have been the compressor. Naturally nobody would be fool enough to stick his neck out by training and certifying to your competence. Which is absurd. But LIABILITY is here to stay and the best defence is to always act in a manner your peers would defend against a lawyer armed with hindsight and a Diving Manual. You have been warned!

## ADDENDUM

A newspaper report on the inquest held recently in Cairns concerning the death of a day-trip tourist diving with hired equipment indicates the urgent need for the application of stricter safety standards. The victim and his wife were on an advertised trip to an offshore tourist resort. As an added attraction, scuba diving equipment was available to anyone who paid extra. The couple had only once previously used scuba, ten days previously in shallow water. They were provided with equipment and allowed to descend to 50 feet depth at the boat's side before commencing an underwater swim towards the reef area shorewards of them. There was another customer, but he gave up when aware of the dive situation. The "instructor" from the boat swam on ahead of the two others, but swam back hurriedly when he observed that the victim was motionless underwater. It was stated that the buoyancy vest was lacking a CO<sub>2</sub> cylinder and that the regulator was functioning imperfectly. The Coroner recommended that the Queensland Government legislate to prevent such a situation being allowed in the future.

## SPUMS SCIENTIFIC CONFERENCE 1981

### MEDICAL SUPPORT FOR DIVERS IN NEW ZEALAND

Tony Slark

New Zealand is a small country and we have a very centralised system for controlling commercial diving. This is only inhibited slightly by rivalry between government departments, which seems to be a problem with government departments everywhere. The Department of Labour has the administration of the Construction Act, the legislation which covers work under water. There is in the Construction Act a requirement for the Department of Labour to produce a code of practice for the worker under water. This is under constant revision. It was revised again at the end of 1980. It follows very much the pattern of the past and has only got a few vital changes which some of us were influential in making.

The other Department concerned is the Department of Energy. This is a very important Department in New Zealand and one which likes to retain its autonomy. Often it refuses to co-operate with the Department of Labour in trying to control the legislation and management of people who work under water. Their reasons for this are difficult to understand. I suppose that they feel in view of the relatively few people involved that their present management is as good as possible. In theory, they review every single contract, note the way that the contract is managed, and send people out periodically to see that everything is alright. It works less well in practice because occasionally things happen that should not happen and no-one ever tells them about it, while some supervisors

manage things in a way that is quite improper. I have heard some quite horrific stories of divers who were following dive profiles and patterns which were manifestly quite improper. Sometimes great pressure has been put upon individual divers to work in a situation which they individually consider to be quite unsatisfactory. Indeed, I know of one supervisor for a large international company who threatened to sack the whole diving team if they would not go underwater in conditions that were not satisfactory. It was only the strength of character of one of the senior divers, who reckoned that he knew more about diving than the supervisor, that prevented this happening.

This is a difficulty of all the operations that come within the scope of the Department of Energy, which deals with all mining, the petroleum investigations and gas installations. On the other hand the Department of Labour has diving fairly well controlled.

We have a system whereby every qualified doctor can examine people for fitness to remain upon the list of construction divers. We gave some thought to following the British pattern, where the doctors are approved and listed. We thought that, in New Zealand, it would be impossible for every single diver who wished to get a proper medical examination to be in a location that would enable him to be seen by a doctor who was on the list. So we decided that we would, as in the amateur diving form that we use, put on one sheet of the diving form, the specifications of the medical examination that we required and the sort of investigations that we wished to be performed. The completed diving forms are sent to the consultant to the Department of Labour. He vets the forms and then advises the Department of Labour on the suitability of that individual to remain upon the list of construction divers. As with civilians we also say fit to dive under all circumstances or fit to dive under certain specified limitations, or with special supervision. For instance, if when one sees an audiogram with a decrement in the higher ranges, one puts down on the form that the diver should not be exposed to loud noises without hearing protection. Now how the diver, and the Department and the company supervisor get around that is their business and the business of the safety supervisor of the Department of Labour, who knows that the specification has been made.

The medical examination is fairly comprehensive. It is the same pattern as the rest of the world. We require, as well as the full history and examination, a history of the previous year's pattern of diving, the amount of diving performed and the sort of diving. We require audiology, spirometry and chest X-ray. Other X-rays are at the discretion of the consultant to the Department of Labour. We have gone away from long bone surveys in every case, because I felt that they were unnecessary, unrewarding and very expensive and possibly in the long term, even a bit dangerous.

The diver is informed of the decision by the Department of Labour. If fit, he is on the list and may perform work in accordance with the Construction Act in the following

year. To stay on the list he has to repeat the examination again the following year.

As far as the supervision of the diver on the job is concerned, the diving contractor is required to have a designated practitioner who should come from a list compiled for the Department of Health. This list includes only those doctors who have been approved by the consultant to the Department of Health. The criterion that is used is a fairly general one, in that he requires them to be members of UMS and SPUMS. Sometimes if he knows the doctor concerned is interested in the subject, he may waive the more expensive requirement of UMS membership and accept the membership of SPUMS. The doctor must be known to be interested in diving medicine and to have a continuing interest in it. We are allowed to be fairly self-selective, which I think is a reasonable attitude in a small country which has a relatively small number of doctors, where the special interest can be readily known to the central authority.

A firm conducting diving operations under the Construction Act regulations has to have a designated practitioner. They must also inform the local hospital through that designated practitioner about the procedures they wish to take in the event of a diving emergency. Over and above that there is reference to the Naval Hospital or, in the South Island, to the two interested consultants at the hyperbaric unit in Princess Margaret Hospital, Christchurch. Both are very capable divers and very capable diving physicians.

One group I have not mentioned are the divers of the Department of Fisheries. They follow exactly the same pattern as those in the orbit of the Department of Labour. The Department of Fisheries also has a consultant to the Department, who vets the divers' examinations as does the consultant to the Department of Labour.

So it is a fairly mixed affair, which only goes wrong when maverick firms come in from overseas, supposedly with overseas advice and consultants, who may or may not be known to us in New Zealand and with absolutely no concern for the local scene. This happens, and divers get injured, extremely badly injured, because of it. One died because of quite inadequate management and hopeless back-up support. When things started to go wrong on this rig, where they were doing unnecessary dives for long periods with unfit divers and a complete absence of training, the only treatment offered to the dying man was 5 mg of Valium orally. The consultant to that diving firm was in Houston (Texas). I think it was an absolute scandal that the firm was allowed to operate in an independent country with such an abysmal lack of concern for the welfare of its employees.

That is our scene, a centralised organisation. It is fairly flexibly conducted, I like to think, even though there is an element of autocracy in it. It is certainly economical in manpower as the consultant to the Department of Labour, the Consultant to the Department of Health and the Director of Naval Medical Services are all the same person, myself.