

LAW REPORT

INQUEST FOR FACTS OR INQUISITION FOR HERESY? A CAUTIONARY TALE FOR ALL WHO DIVE

Douglas Walker

THE DIVE

The basic facts are simple and not in dispute. There were seven divers who met for a dive, five being trained and quite experienced (two were awaiting formal notification of status as assistant instructors) while two were newly qualified and making their second post-course scuba dive (they had not yet received a certification card issued by the Instructor group whose manual, program, and logo were used for the course which they had just completed). The divers knew each other and the victim's first post-course dive was with one of those taking part in this dive. The dive platform, a rock shelf, was only a little above sea level and was covered a few inches deep by water whenever the half metre swell hit the rocks. It was covered by sea squirts (tunicates) and the divers decided it would be safer to walk on it without fins, which would be put on after making their water entry. The sea was calm and this appeared to be a highly suitable entry point for their dive.

It was a warm day so two of the group cooled off first by making a short snorkel swim, then got back onto the rocks and donned their scuba gear. The two notices got kitted up while in the parking area above the rocky point, checking their own and each other's equipment before descending to the platform to join the others. This check disclosed that the victim had mistakenly attached his regulator to his tank upside down so that the hose came over his left shoulder, an error which was again noticed (and corrected) when they joined the others and were checked by one of the experienced divers who had chosen to complete his preparations closer to the water.

To identify the divers and their actions in this incident the following code has been used:

- DA "Assistant instructor" training and had taken a Rescue Course
- DB "Assistant Instructor" training and had Resuscitation and Rescue training
- DC Trained and experienced
- DD Trained to Advanced Diver level
- DE Trained with one year experience
- DF Novice making 2nd scuba dive since recent course
- DV Victim, novice, 2nd scuba dive since recent course

First into the water were DA and DD. They turned, floating quietly in the calm water 5-6 metres off the rocks, to watch the others prepare to enter the water to join them. The DE, who was standing with DV near the edge of the platform ready to enter the water (without fins) shouted out a warning that a larger wave was approaching unseen by DA and DD. The swell was hardly noticed by the two divers in the water but washed over the rock platform a few inches deep and caused both DE and DV to lose their balance. They were helped up by DF and DB, who had been on higher rocks preparing their equipment. DE then entered the water and swam out to DA and DD before donning fins. However DV was less fortunate, another wave now arriving and washing him once more across the rocks and into a gulley. With the help of DB and DF he

succeeded in putting on his fins while in this gulley during the respites between the next two water surges. He was weighted down by his tank and backpack and water was draining into the gulley off the rock platform after each wave so his easiest and most safe option seemed to be to swim down the gulley until he reached the quiet waters off the rocks. He did not show any signs of panic and part inflated his vest when so requested by DF, who joined him. DF, who wore a wet suit and buoyancy vest but not his scuba, told DV to start using his regulator, which he did, and held onto DV's equipment as they traversed the turbulent waters close to the rocks. While this was occurring DB was on the rocks donning his scuba. He swam out and joined DV and DF at the critical time when DV was starting to panic, making rapid arm and leg movements, breathing in a shallow and rapid manner, and grasping his companions and dragging them down.

They were now fairly close to where the other divers were waiting, which was the easiest exit option, so DB signalled to them for assistance. They rapidly joined him and then it was noted that DV was unconscious, his demand valve was no longer in his mouth (when replaced it was spat out again) and there was froth coming from his mouth. The part inflated buoyancy-vest was keeping him at the surface so they did not drop his weight belt, believing that it helped to keep him vertical in the water. As he was unconscious and frothing from the mouth they decided to get him out of the water rapidly rather than attempting in-water resuscitation, and they were close to the exit point at this time. He was pulled up onto the rocks and turned on his side while DB quickly removed his own backpack before commencing to give resuscitation. The beach inspector from the nearby beach arrived a short time later and noticed that head extension was incomplete. He had an "Oxy Viva" and attempted resuscitation without success. The problems caused by regurgitation of fluid into the victim's mouth were noted by him also.

THE INQUEST

At the inquest counsel were present to represent not only the widow and the instructor who ran the training course but also three of the divers, with a solicitor appeared on behalf of another diver. It was the widow's counsel who was largely responsible for the course of this inquest, searching for any evidence of culpable mistakes by anyone involved in the dive or the training course. As a result the basis of questioning was entirely on what the Instruction Manual stated and there was no effective examination of whether, in the circumstances of this dive, the actions taken were reasonable. Not one iota of thanks was offered to any of the divers for their valiant attempts to assist the victim. The coroner noted that he was not bound to observe the usual rules of evidence, a point not commonly known. Also appearing was a representative from the instructor organisation and two persons there to put forward the interests of two government departments.

The instructor organisation noted that the course wrongly promised that those who successfully completed it would then receive a certification card carrying the name of the diving organisation whose instruction manual was used on the course and whose logo was displayed in the dive shop. Because of an unresolved question of conforming to the organisation's list of course requirements the instructor

had been notified that he held a non-teaching status. The witness carefully made no comment on the course the victim had taken beyond noting the apparent omission of pool dives (however there had been five open water dives). Evidence was given that the end of course written test was unsupervised and the pupils had easy access to their note books at this time, but no evidence was offered on whether this compromised the diving ability of pupils who completed the course. It is noteworthy that DF, the second of the novice divers on this dive, acted in a highly commendable manner and had obviously reached a high standard of ability.

In contrast the input from governmental sources seemed to be designed to support proposals to introduce laws to control diving instruction rather than to have any relevance to the unfortunate incident. It was claimed that the introduction a few years previously of a voluntary code for dive shops hire of equipment and supply of air "had dramatically reduced for some eighteen months to two years" diver deaths but over the past twelve months the numbers showed a rise again, which was taken to mean that voluntary methods were failing. There was no evidence offered to support this conclusion, one which the Provisional Reports on Diving Related Fatalities certainly in no way suggests. Neither was there any evidence offered that the dive course inadequately prepared the victim. The other government department's expert was equally unhelpful to this investigation because he made no attempt to relate the facts of the case to his comments. He correctly noted the absence of a dive flag, which was a nil factor in the incident, made a suggestion that the victim may have become fatigued while he tried to orally inflate his vest (which was inflated by hose supply from his full tank), and misrepresented evidence about the water conditions. The beach inspector stated the sea was calm but about every 30-40 minutes there would be a group of larger waves. As the divers observed the sea over 20 minutes before commencing their dive, there was a pre-dive check made of the novice divers, two of the experienced divers waited in the water a little off the entry ledge watching carefully as the others prepared to enter the water to join them in quite shallow calm water, the dive management showed care was taken even though the dive was loosely structured.

Criticism was levelled by counsel on the divers because a series of actions differed from those given as being correct in the instructor organisation's book. This assumed that all advice given in the book was beyond dispute as the only safe and correct action permissible. Such was not established. It was assumed that climbing out of a gulley filled with rather turbulent water was the only safe course of action, to seek a respite in calm water was incorrect. It was assumed that one must release the weight belt of the victim even should he be adequately supported by his buoyancy vest, and the assumption was made it was necessarily always better, even should a victim be unconscious, frothing from the mouth and a suitable safe exit area be close by, to attempt in-water resuscitation by EAR. There is no documentary proof to support such views. The actual degree of support afforded the diver by his vest, an important detail, was never ascertained.

CONCLUSIONS

The fatality appears to have been truly "a misadventure" and the result of an inexperienced

diver being unexpectedly, and several times, tumbled about by waves coming out of a sea which appeared to be calm, these sweeping across the rocks on which he was standing. Though he managed to don his fins, and followed advice to inflate his vest and use his regulator, he was less in control of self management than was apparent and apparently removed his demand valve while being assisted out to the calm water, this being associated with an increasingly uncontrolled breathing pattern and rapid but ill coordinated limb movements. He then inhaled water and rapidly became unconscious. The rescue and resuscitation response by his dive companions was unsuccessful. There was no probing of whether the divers were correct in their decision to take the victim to deeper calmer water, to leave the weight belt in position, not to attempt in-water EAR (two had taken resuscitation and life saving courses but were not asked whether these courses adequately prepared them for the situation they encountered). Although great play was made of the instructor's membership-status in the instructor organisation, his poor written notes recording the training of his pupils, the absence of any real supervision of the end-of-course written test, the omission of pool dives in favour of (protected) open water dives, and the misrepresentation to pupils that they would be granted a card of certification by the instructor organisation, nothing was found to link this fatality with any course deficiency.

Another coroner (case 170) has stated "that in activities where accidents can and do occur, the question must always be asked: How well instructed or prepared was the person for the particular activity in which he was engaged?" Here the evidence points clearly to the victim being trained and also having the correct equipment in good working order. It is to be hoped that coronial investigations continue to follow the guidelines defined by a New Zealand coroner who said that it was not the coroner's function to establish blame, it was his function to establish the identity of the deceased and when, where and how he died. Counsel have different objectives, the interests of their client being their sole consideration.

DIVING SAFETY MEMORANDA

Department of Energy Diving Inspectorate
Millbank London SW1P 4QJ

DIVING SAFETY MEMORANDUM NO. 3/1986 DETERMINATION OF OIL VAPOUR IN COMPRESSED AIR

It has come to our notice that Draeger gas analysis tubes of the type 10/a and 1/a can underestimate the quantity of oil vapour in a gas sample. Draeger are currently publishing new calibration cards for these tube types. It is recommended that the finest droplet size (0.3 to 0.5mm) calibration is used for assessing oil in breathing gas.

Diving companies are to ensure that a valid calibration card is used if they are utilising Draeger tubes to verify compressed air to BS 4001 part 1.

The revised calibration cards can be obtained from:

Draeger Safety
PO Box 4
Blyth
Northumberland NE2X 1HA

R Giles
Chief Inspector of Diving

LETTERS TO THE EDITOR

Thames Hospital Board
Mackay Street
Thames
NEW ZEALAND

4 June 1986

The Editor
South Pacific Underwater Medicine Society

18 December 1985

Dear Sir

HIATUS HERNIA AND DIVING

Dear Sir

I was recently asked to assess the cardiac status of a 67 year old experienced diver who on 2 or 3 occasions in the middle of this year, experienced attacks of breathlessness lasting for 10 to 12 minutes. On two occasions he became alarmingly breathless when surfacing from 100 feet and on another occasion when descending to 10 feet.

A stress ECG was conclusively negative. Eight and a half minutes of exercise on a bicycle ergometer using a modified Bruce Protocol was tolerated well. However, a chest x-ray showed an incarcerated hiatus hernia with a large fundal gas bubble to the left of the heart. He then disclosed a dyspeptic history of 35 years with increasing dyspepsia, with regurgitation and retrosternal pain for 5 years. He tends to vomit at dinner time and is breathless on putting on his shoes.

Past and recent investigations have indicated incarceration of the hiatus hernia from 1981. Inconstant motility disorders of the oesophagus were demonstrated by Mr JF Carter of Green Lane Hospital in August 1983. Current films indicate that approximately the upper half of the stomach is lying in the chest cavity and is of para-oesophageal type with the cardia lying just below the level of the left side of the diaphragm. Of interest too, is that an IgG Monoclonal band of 1795 (normal range 800 - 1800) is present. This is of unknown significance as there is no evidence of myelomalignancy, such as Bence Jones proteinuria, elevated calcium, excess of plasma cells in the bone marrow etc. The haemoglobin is low at 13 g/l. His other laboratory tests have proved non-contributory.

In my opinion, the gas bubble in the incarcerated hernia in this patient could contract at depth and re-expand at the surface causing discomfort and distress. However, this hypothesis does not answer the question of why his symptoms have only developed recently in the presence of a 35 year history unless his low grade anaemia and paraproteinaemia are of importance. It also raised the issue of hiatus hernias and diving in general. Should a hiatus hernia be a contra-indication to diving?

Yours faithfully

SA Maar
Physician

In view of the importance generally attached to the wise use of Australia's natural resources, the Australian Committee for the International Union for Conservation of Nature and Natural Resources (ACIUCN) has developed a policy and guidelines for the establishment and management of marine and estuarine protected areas (MEPAs). This will be presented to State and Commonwealth agencies to help them develop better strategies for managing both coastal and offshore natural resources and environments.

The Committee has developed a package of materials which is aimed at improving public awareness of the need to protect our marine heritage and to provide for resource and habitat maintenance in Australian waters. Part of this package is an article which identifies the needs and the role that MEPAs can play in meeting them. A copy of the article is enclosed for possible use in your newsletter or for distribution to your members.

Diving is generally compatible with the objectives of MEPAs and will be allowed to continue in most areas. Any thought by divers that MEPAs are contrary to their interests is unwarranted.

Under the ACIUCN policy, protected areas are established in full consultation with user groups. Divers are in a unique position to assist in the task of ensuring that the range and quality of recreational opportunities on and under the water are maintained. Your members' input to proposals for protected areas is valued and needed.

Increased understanding of and co-operation in conservation programs is essential if present and future generations of Australians are to experience and enjoy the long term benefits of marine and estuarine environments. Help from your organisation is needed to encourage governments to adopt the ACIUCN policy, and to understand the need to conserve, protect and use wisely Australia's nearshore and offshore marine areas.

If you would like further information about marine and estuarine protected areas, and/or a copy of the Policy and supporting papers, please write to

Secretary
Marine Reserve Sub-Committee of ACIUCN
GPO Box 636
Canberra ACT 2601

Yours sincerely

Pam Eiser
President
Australian Committee for the International Union for
Conservation of Nature and Natural Resources