Provisional Report on Australian Diving Deaths in 1978
Dr Douglas Walker

Overview Thirteen (13) diving related deaths have been identified as having occurred in 1978, though additional cases may have escaped detection by this survey. There were four (4) breath-hold diving deaths, seven (7) while using scuba, and two (2) with a hose supply of air. The common factor linking the majority of these fatalities was the victim's ignorance of the dangers of the type of activity he was undertaking. There was one instance where a totally unpredictable acute medical emergency was the critical factor, the probable outcome being death, even if correct buddy procedures been followed. In two cases the buddies were present and offered immediate assistance and deserve commendation despite the fatal outcome. According to available evidence, none of the victims were trained or experienced nor had an appropriate buoyancy aid. Four of the scuba divers managed to drop their weight belts and two also attempted to ditch their scuba backpacks. One became entangled in the straps. Both the hose supply victims died because their hose connections parted, causing them to receive water inhalation with their next breath. It is apparent that the seeming simplicity of breath-hold, scuba and hose-supply diving results, even nowadays, in people neglecting to obtain competent instruction in the skills required to survive misadventure, and even more required in order to minimise the risk of getting into a dangerous situation.

Brief Case Reports

As in previous reports these notes are based largely on the evidence presented at Coroners' Inquests, though such reports are not yet availabe for tow of the fatalities. Such information sourses usually contain the significant facts necessary to reconstruct the cirtical path of the events and the factors influencing this outcome rahter than survival. Where the Coroner has accepted the depositions of evidence but not actually questioned the witnesses there is a greater pobability that there will be omission from the record of some desirable information thought unnecessary for the Coroner's consideration in deciding that the death was "natural, unfortunate and accidental". The very thourough and efficient nature of investigations by interested Coroners is a confirmation of the value such personal involvement to complement to basic facts of the case detailedin depositions by witnesses. The true experience of bothe the victim and his companions is not always elicited, unfortunately, though lack of a clear statement almost certainly indicates the absence of certificates of attainment and training. The type of buoyancy aide, though obviously known, is usually not recorded. It is suggested that in reading theses reports one imagines the different secnario that could have been followedhad all those involved work effective buoyancy aids.

Case BH 78/1
It was the usual practice of this young man, aged 27, to dive off his father's boat to attach the line to a rock mooring. This mooring was submerged and lacked a float. The tide was high and it took him three short dives to locate it. His father shouted to him to give up the search and they would use an anchor, but he seems not to have heard this and he was seen to submerge once more. After a short time it was noticed that he was spending an unduly long time underwater and two people dived in to search for him. The body was discovered lying on the sea bed, at a depth of 7.5 metres (25 feet), still wearing the weight belt and other equipment. He was described as being a good swimmer and a skin diver with five years experience. It is highly likely that this was a post-hyperventilation blackout drowning, an ever present danger to breath-hold divers seeking extended time underwater.

SOLO. NO WET SUIT. COLD, ROUGH WATER. FATIGUE. ALCOHOL. FAILED TO DROP WEIGHT BELT. POST-HYPERVENTILATION BLACKOUT.

Case BH 78/2

When these two fishermen found that they were unable to raise one of their lobster pots, one of them, aged 30, made a breath-hold dive to free it. He surfaced to report finding the pot, then dived again. This time, however, he failed to return to the surface. The other fisherman then dived but was unable to see him so returned to the nearby beach in his boat and asked two swimmers to help him. They found the victim entangled in the rope that was attached to the pot, which was caught between rocks. The body was then

brought to the surface by pulling on this line. The victim's experience is unknown, but as he had brought a wet suit, goggles and fins with him it is likely that he had made such dives previously and was confident of his ability to undertake the freeing of a pot in 9 metres (30 feet) of water. His friend considered him to be a competent diver.

SOLO. ENTANGLED IN ROPE. POST-HYPERVENTILATION BLACKOUT

Case BH 78/3

This group of four friends went to the sea for a swim but had only two face masks between them. They decided that one should be worn by the most experienced while the others had the other mask, using it in turn. When his turn came the victim, aged 19, decided to keep near the other diver as he was not a strong swimmer. The experienced swimmer, however, saw a squid and swam underwater after it. When he surfaced he saw the victim about 1 metre (3 feet) away, standing waist deep in the water, and after his next dive saw him swimming again, about 6 metres (20 feet) from the water's edge. He then swam a further 1.5 metres (5 feet) and looked once more. His friend was no longer visible. An immediate but unsuccessful search was made. Eventually the body was discovered on the sandy sea floor with the mask still on and the snorkel still held in the mouth. He had not been wearing any weight belt. At the autopsy it was discovered that a congenital type cerebral artery aneurysm had ruptured, this causing subarachnoid haemorrhage. There was no history of previous ill health to give warning of the presence of this condition.

SURFACE SEPARATION. CALM, WARM SEA. NO BUOYANCY VEST. NO WEIGHT BELT. SILENT SUDDEN DEATH FROM SUBARACHNOID HAEMORRHAGE.

Case BH 78/4

Fishermen, when keen, will let nothing keep them from their prey. This man of 46 was also a good swimmer so he bought a speargun so that he could really get in amongst the fish at a good spot he knew. A few days later he decided to try out his new acquisition. He entered the water from rocks, wearing shorts and goggles but without snorkel or fins. The speargun was attached to him by a line, though he held it in one hand on this, his first dive. Soon after entering the water he found that the swell had increased due to a change in wind direction, tending to sweep him away. A friend saw what was happening and ran to fetch a rope, which he threw to the victim. However, despite entreaties, he would only grasp it with one hand while holding his new gun in the other. The power of the waves soon proved too great and he was drowned. Although included in this survey, this victim could equally be regarded as a swimming accident. It illustrates the sad result of misreading the sea conditions and of fixing on the wrong priorities in an emergency situation.

SOLO. INEXPERIENCED. ROUGH WATER. NO SNORKEL. NO FINS. NO BUOYANCY VEST. ALCOHOL. FAILED TO DROP SPEARGUN SO ONLY ONE HAND FOR RESCUE ROPE. NO INQUEST CONSIDERED NECESSARY.

Case BH 78/x

The snorkel is usually considered a simple and foolproof aid to surface swimming, one that requires no instruction in its use. Occasionally this is disproved and a fatality occurs. The victims sometimes being children.

In this instance a child of 8 years was snorkelling in 1 metre (3 feet) of water in a lagoon, watched by his parents. They lost sight of him and assumed that he had left the water to play elsewhere. Unfortunately they were wrong, for a snorkeller chanced to find the body lying on the bottom. The victim was in such shallow water that it had been assumed that he would have been able to stand up if he got into any difficulties. All his equipment was on but the snorkel did not have a mouthpiece. Presumably water was inhaled and a very natural panic reaction blotted out rational action before unconsciousness and death intervened.

SOLO. CALM, SHALLOW WATER. SNORKEL WITHOUT MOUTHPIECE. INCIDENT UNOBSERVED.

Case SC 78/1

This 17 year old boy bought scuba equipment to improve his retrieval of golf balls from the water traps on the local courses. It had previously been his practice to locate them by walking with bare feet in likely areas. Two days after this purchase, accompanied by a friend, who had recently come out of hospital and was still wearing a back brace, he went to a dam on a nearby golf course. The friend noted the presence of a profuse growth of water weeds and tried to persuade him not to swim there but he entered the water and started towards a small islet 15 metres (50 feet) away. However after going only about 5 metres (16 feet) he surfaced and screamed for help, then disappeared again underwater. The friend was naturally unable to effect his rescue, being limited by his disability. The police divers were called and even they found the conditions dangerous and body recovery difficult, by reason of the water-weed. It was probably the victim's first ever dive with scuba, but this is not known with any certainty.

SOLO. UNTRAINED. NEWLY PURCHASED EQUIPMENT. NO BUOYANCY VEST. NO FINS. BARE FEET TO FEEL FOR GOLF BALLS. ENTANGLED IN WEEDS IN DAM. FAILED TO DROP WEIGHT BELT.

Case SC 78/2

This diver's buddy had a C-Card certification and 10 months diving experience. The victim was considered a poor swimmer and an inexperienced scuba diver. Indeed his buddy stated later: "Before the dive I showed him the elementary safety precautions but he got into difficulties". They spent time snorkelling, then donned their scuba equipment and had a dive, surfacing about 35 minutes later when low on air. They started back towards the shore, on the surface, with the buddy leading. The sea was now choppy, limiting visibility to 1-1.5 metres (4-5 feet). Near to the shore the buddy looked back but was unable to see his friend, so got up on a rock to obtain a better view. He saw him about 45 metres (150 feet) away, apparently swimming towards him, so re-entered the water and swam to join him. When he found that he could not locate his friend after a search, he gave the alarm. A full search was organised but soon had to be abandoned because of the very poor visibility that had developed. The body was found floating the next day, supported by the empty tanks and without the weight belt. He was 24.

UNTRAINED. SECOND USE OF SCUBA. POOR SWIMMER. FEARFUL OF DEEP WATER. NEWLY PURCHASED EQUIPMENT. NO BUOYANCY VEST. CHOPPY SEA. POOR VISIBILITY. SURFACE SEPARATION. HAD CONTENTS GAUGE BUT RAN OUT OF AIR.

Case SC 78/3

Having recently completed a scuba diving course these two divers planned a dive in a small neighbouring bay. They surfaced after 45 minutes underwater to find themselves far out from shore, in the turbulent water at the mouth of the bay. The water here was 15 metres (50 feet) deep, which was more than they desired. They decided to return towards shore to quieter and shallower conditions, by swimming underwater. However during descent the buddy, who was leading, found himself too low on air to continue and was forced to return to the surface. Although they had agreed that separation meant that both should return to the surface to regain contact, the second diver failed to surface, his buddy being forced to conclude that he had continued alone towards shore underwater. There was poor visibility so the victim could have been unaware that his friend, who led, had ascended. Neither diver wore a buoyancy vest or had a contents gauge on his tank, though such had been used during their training course. The buddy on the surface raised the alarm when his friend failed to surface, his calls bringing others to the scene: he himself was out of air and exhausted so had to leave the search to others.

The body was found on the sea bed in about 15 metres (50 feet) of water, the weight belt off and lying across the air hose to the demand valve. The mask was pulled down from the face. The speargun, which he had been carrying, was found nearby. The visibility was so poor that the search had to be done by touch rather than direct vision. The experienced diver who found the body was unable to raise it until he had first cut the webbing to ditch the backpack, but it is not stated what prevented him from using the quick-releases that are usual on such equipment. This equipment was later recovered and tested but no record of the results is in the records: presumably therefore it functioned correctly.

For a very recently qualified diver to become out of air at 15 metres (50 feet) depth in nil visibility, and while alone, would have been an extremely dangerous situation even had he not also been tired and troubled by rough water. The victim was aged 21.

TRAINED. INEXPERIENCED. ROUGH WATER. NO BUOYANCY VEST. OUT OF AIR AT DEPTH. SEPARATION. POOR VISIBILITY. MASK DISPLACED. WEIGHT BELT DROPPED.

Case SC 78/4

Four friends went on a holiday together. One day they hired a boat and some scuba equipment, kitting up in the boat at the dive site. One of the group had some ear trouble and swam on the surface only while the three others prepared for their dive.

The most experienced one instructed the other two on the use of the equipment while on the boat. The victim-to-be claimed to be experienced, but was apparently far from being so. For the other diver, this was his first ever scuba dive. They checked that they all had their air turned on, then made their water entries by backward roll off the boat, fully dressed except for fins. The victim was the last to enter the water, apparently leaving his fins in the boat. He made a brief return to the surface near the boat, waving his arms in an apparent expression of distress before again disappearing beneath the surface. There was some swell and current, murky water greatly reduced the visibility. When last seen he did not have the demand valve in his mouth.

There is no evidence that any of this trio had either snorkel or buoyancy aid. An immediate search was made when the victim's alarm and immediate disappearance were noted, the more experienced diver being joined by nearby divers. The body was found on the sea bed several hours later, minus mask and the 7 kg (16 lb) weight belt and with the arms seemingly pinned behind his back by the webbing of his scuba set. No evidence was presented to show whether the quick-release functioned on this equipment or whether it had been tied in such a way as not to be easily loosened. Subsequent testing established that the scuba set functioned correctly. At the autopsy, fresh middle ear haemorrhages were noted. The victim, aged 22, may have been suffering some sea sickness discomfort before diving. As the neophyte diver of the trio entered the water with apparent excess weights and no fins, and found that one of the fins he was given was uselessly loose, it is indeed fortunate that he lived to say: "I went through everything that (my friend) showed me (before entering the water) because I had never dived before". Somewhat naturally he remained clinging to the side of the boat and made no attempt to join in the search. Water depth was 7.5 metres (25 feet). Lack of fin-power was one of the critical factors, negative buoyancy and middle ear barotrauma from an uncontrollable descent being similarly lethal in their effects.

UNTRAINED. INEXPERIENCED. HIRED EQUIPMENT. NO BUOYANCY VEST. OVERWEIGHTED. ENTERED WATER WITHOUT FINS ON. DITCHED WEIGHT BELT. ARMS TRAPPED WHILE DITCHING BACKPACK. EQUIPMENT HIRED TO UNTRAINED DIVERS. ONE (SURVIVING) WAS USING SCUBA FOR THE FIRST TIME. ONLY INSTRUCTION WAS IMMEDIATELY BEFORE WATER ENTRY FROM BOAT.

Case SC 78/5

Because he had recently completed a diving course and shown himself to be a good student, this 21 year old diver was included in a boat dive with five more experienced divers. As events turned out he made his descent in company with two others, one of whom retrieved the fin he lost during descent. When this diver returned the fin, the victim had reached the sea floor. At 12 metres (40 feet), the victim indicated he wanted to buddy breathe with the buddy still present. There was no apparent sign of any panic and air was seen coming from his regulator. After a couple of successful exchanges there was a reluctance to return the mouthpiece to the donor. While the donor was taking a necessary couple of breaths the victim was seen to go suddenly limp, probably following inhalation of water. The victim made no attempt to inflate his CO_2 vest, drop his weight belt, or start ascending. It is not known why he desired to buddy breath at this time. It seems that death struck as unexpectedly for the victim as for his buddies. These two divers brought him to the surface, ditching his equipment, before getting him into the boat. The equipment was recovered later. Resuscitation failed to restore him to consciousness and although he reached hospital he died from the effects of water inhalation and cerebral anoxia the next day. Although he had a history of easily induced concussion, which he

had withheld from the doctor at his “diving medical”, this is unlikely to have been significant to his decease. The coroner’s remarks concerning dangerous sports are reproduced later in this report and are worthy of consideration by all instructors and dive leaders, or even taken as a philosophy for living.

NEWLY TRAINED. VERY INEXPERIENCED. EQUIPMENT CHECK BEFORE DIVE. LOST A FIN DURING DESCENT. UNEXPLAINED PROBLEM ON SEA FLOOR. EXCELLENT BUDDY RESPONSE. BUDDY BREATHING PROBLEM. DID NOT INFLATE VEST OR DROP WEIGHT BELT. SUDDEN UNCONSCIOUSNESS. DELAYED DEATH.

Case SC 78/6

Once more the surface is shown to be a Zone of Danger. These two divers had been scuba diving, the victim watching his friend spearfishing. They became low on air and ascended shortly after the buddy shot a fish that escaped into a cave with the spear. The buddy told his friend to either wait where he was on the surface or to start to snorkel back to their boat, 60-90 metres away. He then dived to retrieve both fish and spear, surfacing to find no trace of the other diver. Having regained his boat without trouble he then noticed a man on the shore who indicated that there was a diver in trouble near the rocky shore, so he cut the anchor line and drove to the place indicated. There he found the victim floating minus all equipment except for his wet suit. The victim was too large a man for him to get into the boat single handedly so he sent a Mayday call for help.

A police boat soon arrived and, after towing the other boat a safe distance from the rocks, one of the policemen came aboard and helped get the victim on board. Resuscitation, in the small boat, was difficult in the rough conditions. Shortly after this a helicopter rescue team arrived but it was not possible to restore signs of life. The victim was aged 40 and was said to have been navy trained in time past, but he had not undertaken any diving for several years. The water was choppy at this time. The equipment was never recovered for test and the suggestion that his snorkel may have separated into two pieces cannot be evaluated. He had no buoyancy aid.

TRAINED. FOUR YEARS SINCE LAST DIVE. CHOPPY SEA. NO BUOYANCY VEST. SURFACE SEPARATION. SURFACE PROBLEM. OUT OF AIR. DITCHED ALL EQUIPMENT. FOUND FLOATING DEAD.

Case SC 78/7

The sudden tragic turn of events that occurred during this seemingly simple training dive underlines the necessity to correctly assess all possible factors before starting any dive, especially where those involved lack experience in the type of diving to be undertaken. In this case, four divers attended a dive in a dam. A greater number of club members had been expected. The diver, who was both instructor and dive leader, took the three others to a small islet, then dropped a shot line from a 2 gallon float. This line was 22 metres (75 feet) long and weighted with a weight belt. Although it was not expected to touch the bottom here, the line appeared to become firm on something underwater. While he remained on the islet with one of the part-trained divers, the other two swam out to the float and commenced their dive. The victim had been receiving club instruction in scuba diving for about 7 months and had made several sea dives, possibly to 15 or 18 metres (50 or 60 feet), but was not yet a fully qualified diver. The experience of the buddy is uncertain, but possibly similar. They were joined together by a buddy line and wore buoyancy aids. The victim was leading the descent, holding onto the line with one hand and holding a torch in the other. This he shone on the second diver’s face during descent. The water was cold and dark, light not penetrating below 3 metres (10 feet), so the second diver could not read his depth gauge, his ears being the only indicator of their descent.

Those ashore saw the float submerge, reappear, then descend again for a period of time. When it finally reappeared it was crushed, which alarmed the observers. They immediately rowed to the float, arriving as the survivor diver “bounced up” from the water. The instructor dropped another marker, presumably noting that the original one was free, and dived in an attempt to locate the missing man, but his search was unsuccessful. Several subsequent police diver searches were similarly unavailing and it was a week before the body was located on the dam floor at the foot of a large tree, at a depth of 36 metres (120 feet).

The buddy described how their descent halted before reaching the end of the shot line. The victim (leader) then started to shake and called out the buddy's name. This alerted him to the fact that the other no longer had the demand valve in his mouth, so he reached forward and replaced it. This failing, he offered his own mouthpiece. Believing that entanglement had occurred in the line or in the branches of a tree, he tried to cut his friend free with his knife. This included severing the shot line and float. Next he tried to drag the victim free by inflating his own vest. Becoming alarmed for his own safety he cut the buddy line and ascended, the rate becoming such that he had to puncture his vest (the type of vest was not stated, but it worked efficiently) to slow his ascent.

The subsequent very thorough investigation established that the victim had mentioned some ear symptoms earlier that weekend, had 12 kg (20 lb 10 oz) on his weight belt, and had suffered bilateral perforated ear drums during the incident (evidence noted at the autopsy). As the float was insufficiently buoyant to support the divers they could not use the line to arrest their rate of descent, and neither could the line fulfil its secondary purpose of being a stable reference point in a mid-space, nil-visibility situation. The excessive weights would cause uncontrollable descent and the victim would had have no chance to equalise his ears before pain and vertigo completed his disablement. There would be cold, darkness, spatial disorientation, entanglement, ear pain, vertigo from cold water entering the middle ears and loss of air supply, rapidly followed by inhalation of water. A fatal conclusion was unavoidable in these circumstances. The way the buddy reacted was remarkable and deserving of high commendation. The victim's vest was later found to lack a CO_2 cylinder. The coroner made recommendations indicating his view that all dives below 9 metres (30 feet) should employ the full RAN diving procedures: lines to the surface, buddy lines, a ready kitted up surface diver on standby, etc. Such precautions are hardly likely to gain wide currency outside disciplined organisations, but at least dive planning should include correct weighting, having regard for the equipment worn, the intended depth, dive purpose and whether salt or fresh water. An effective buoyancy aid should be worn, and at least one of every diving pair should be sufficiently experienced in the type of diving being undertaken to be able to predict and manage all probable problems. And to be of more than token value, any shot line should be firmly fixed, both top and bottom. If you fly a sky anchor, fly it right!

PARTLY TRAINED. INEXPERIENCED. DIVING IN FRESHWATER. COLD. DARK. OVERWEIGHTED. INADEQUATELY SUPPORTED SHOT LINE. UNCONTROLLED DESCENT. KNOWN TO HAVE TROUBLE EQUALISING. RUPTURED EARDRUMS. NO CO_2 CYLINDER IN BUOYANCY VEST. ENTANGLEMENT IN LINE AND TREE. FAILED TO DITCH WEIGHT BELT. BUDDY AVOIDED PANIC, CUT SHOT LINE, INFLATED VEST BUT COULD NOT FREE VICTIM. CUT BUDDY LINE TO ESCAPE.

Case H 78/1

These two divers were experienced hookah divers, but neither of them had ever received instruction in hookah diving. The victim, aged 27, had been diving for possibly 5 years and his buddy for 10 years. Both had usually dived with different partners, this being only their third dive together. They had been using home-constructed hookah units, as was apparently the local custom. On this occasion, both the unit and the boat belonged to the buddy. The was 10 years old. They proceeded to spearfish, though with only one gun between them, in 15 metre (50 feet) deep water.

They each had 60 metres (200 feet) of air hose from the compressor, which was left working in the unattended boat. Each diver checked his own equipment. They wore two weight belts each, their normal custom. About half an hour after starting the dive they saw "the first decent fish" they had encountered so far and the victim was seen to start to drift after it. Due to poor visibility, of about 3 metres (10 feet), he was lost from sight. The buddy held back so as not to frighten the fish and spoil his friend's chances of a kill. After swimming about a further 6 metres (20 feet) he noticed that his air supply had improved and supposed from this, that his friend must have returned to the boat. As he started his return swim he soon came upon the victim on the sea bottom, not far from where he had last been seen. His hose was not entangled in any way. The victim's demand valve was not in his mouth and he still wore both weight belts. His facemask was still on, though there was water and blood in it. The victim was too heavy for the buddy to raise so he returned to the boat and pulled the body up by the air hose,

which was still attached to one of the belts. Resuscitation was unavailing. The demand valve and the short length of attached air hose was later recovered from the incident site and all the equipment was tested.

Investigation revealed that the brass snap-lock connection had developed some rust and deposits during its years of service and failed to lock home securely unless extra pressure was used to mate the pieces. The general condition of the equipment was described by the police expert witness as “poorly maintained”, with specific comment to nearness of the air intake to the engine exhaust. However although the air conditions would have encouraged carbon monoxide to be drawn into the intake, this was not a factor effecting the incident. The weight belts totalled 12.8 kg (28 lb 5 oz), and although one had an efficient quick-release the other had been secured by passing the running end of the belt through the buckle itself, the belt having a nick that engaged the buckle, then back through the buckle. Sea conditions were calm.

It is supposed that the victim exerted some added strain on his hose, possibly catching it with his elbow while loading the speargun, and caused the connection to separate. His first intimation of trouble would be when he inhaled water instead of air, for the non-return valve would be no safe guard against such a line disconnection. As the demand valve mouthpiece and short hose section were not attached to his equipment, they were found separately from him. Being over weighted, untrained, and taken by surprise, his chances of reaching the surface were virtually nil. The coroner itemised all these points in his summing-up.

UNTRAINED. EXPERIENCED. NO BUOYANCY VEST. OVERWEIGHTED. POOR VISIBILITY. NO QUICK RELEASE FOR WEIGHT BELT. SEPARATION UNDERWATER. SUDDEN AIR LOSS WHEN HOSE UNCOUPLED DUE TO CORROSION. UNATTENDED BOAT.

Case H 78/2

This crewman, on a foreign ship, undertook to clear the blocked water inlet pipe opening. The blockage had occurred while his trawler was moored at a wharf in port. The work depth being only about 3 metres (10 feet), though water depth was 15 metres (50 feet). It is uncertain whether he had actually used this particular equipment before despite his protestations of experience and belief in his own ability. The apparatus was rarely used and seemingly not the responsibility of anyone to maintain in good order. For his task he wore neither weight belt nor lifeline. The facemask was of the gas mask type, firmly maintained in position by straps, such that it would be impossible to quickly remove it in an emergency. The air hose was of two lengths joined over a metal tube with the aid of wire. Nobody was in specific control of the compressor but a crew man was tending the air hose.

The diver was seen to surface and hold up a handful of jellyfish, presumably from the inlet, and then to submerge again. It was supposed he was checking whether the job been completed successfully or not. The line tender noticed that an apparently excessive length of hose was being paid out, and later realised that the diver had been lost. A police diver search later found the victim on the harbour floor beneath the ship. The hose was disconnected at the junction and it was supposed that the diver’s lack of a weight belt would have necessitated him pulling hard to get round the hull and he put too much strain on the connection, resulting in its coming apart. His mask would have immediately flooded with inevitable drowning of the unfortunate diver. The lack of a lifeline made any surface assistance quite impossible, in fact any pull on the airline would have caused just such a hose separation that occurred. There was a current working at the critical time of the dive.

UNTRAINED. PROBABLY INEXPERIENCED. POOR EQUIPMENT. UNSAFE MASK. NO WEIGHT BELT. NO FINS. NO BUOYANCY VEST. AIR HOSE DISCONNECTED.

Discussion

The four breath-hold divers illustrate well known danger factors viz. entanglement, inability to survive in rough water, hyperventilation resulting in anoxic loss of consciousness and sudden disabling illness. None of these are survivable in the absence of immediate appropriate assistance by another person, and all these victims were alone and without buoyancy aids at the critical time.

The scuba divers died as a result of a range of problems. Significant common factors being the inexperience of the victims and their lack of effective buoyancy aids. It can be reasonably surmised that the toll could have been higher, several of the buddies being in high risk situations. It is noteworthy that death, when it strikes, is very rapid. Water inhalation appears to be the major road to the Mansions of Eternity, an event whose consequences are hard to escape. Weight belts were successfully dropped by four divers, two of whom also intended to ditch their scuba sets. One succeeded but the other became entangled with the webbing during his attempt and drowned thus. It is debatable whether such ditching was appropriate action in the circumstances: the presence of effective buoyancy aids would have ensured surface safety, and the tank is either heavy with air, or light and buoyant if empty. There are not any adequate descriptions available concerning the quick-release aspects of the sets involved. Two fatal cases were associated with excessive weighting of the victim, and some of the buddies are thought to have been similarly at risk.

The inexperience of these unfortunate divers in no way prevented them from obtaining scuba equipment. That basic training in scuba diving was given on two occasions while actually in the boat awaiting water entry, is an alarming piece of information for those interested in reducing fatalities and indicates that many divers remain unconvinced about the necessity for training before starting to dive.

In two instances ear troubles were shown to have been significant. In both cases, this being the result of uncontrolled descent due to overweight. These cases have been described in detail and involve a number of other important breaches of safe diving practices.

In conclusion, one cannot better the words of one coroner, who put the problem in perspective when he stated: It would be a simple matter to take the view that the deceased, by engaging in this particular recreational pursuit with its inherent dangers, had in some way brought about his own demise. Much the same sort of considerations would apply to those who, for recreational pleasure, pursue such activities as hang-gliding, parachute jumping, mountain climbing and the like. But, in all these seemingly dangerous activities, where accidents can and do occur, the question must always be asked: “How well trained, instructed or prepared was this person for the particular activity in which he was engaged?” It would seem a perfect summary of what diver training is all about.

Acknowledgements

This report would not have been possible without the assistance of many persons and groups, and in particular the generous and continued assistance of the Attorney-General’s and Justice Departments in every State. In addition the growing interest and assistance of Water Safety Councils and the National Safety Council is gratefully recorded.

Project Stickybeak

Readers are requested to support this investigation by sending reports of diving-related incidents, however mild and apparently well known they may seem to the

person reporting to the address given below. Confidentiality is assured. Although non-fatal incidents are not the subject of this report they are of great importance and will be reported upon at a later date. Safer diving is the result of learning from past experience, and sharing of such experiences can improve the recognition of developing risk situations while it is still possible to influence the outcome to a safe conclusion. No problem can be remedied until it has been identified as being a problem, and Incident Reports are essential for this to occur. Please write:

Dr Douglas WALKER
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Whales: Dr Sylvia Earle on Radio

In a recent ABC radio interview Dr Sylvia Earle was questioned about the ability of whales to dive deep and long, and whether they are intelligent. Her brief remarks pointed out the interesting facts now known and the much larger corpus of information of which we are ignorant. Apparently the song of the whales (Humpback) evolves during the season but is common to all the whales in that area for the season, changing completely the next year. It is thought that the sound is created by air movements within the air passages and no air is expelled. The sound can be heard for possibly hundreds of miles by other whales and can be experienced also as a painful vibration by a diver near a “singer”. (It has taken the electronic era for human pop songs/music to reach this intensity, she might have added, but didn’t!). The humpbacks have also invented bubble-net fishing, swimming round dispersed krill exhaling bubbles to frighten them into a tighter packed school, then rising in the centre to feed. The ability they have to descend into cold, deep water for prolonged periods of time is not fully explained, for till recently, biologists tried to understand living things by examining the dead only. Having seen the young, and old, whales play and come to realise the individual personalities of the whales, Dr Earle is naturally in the forefront of the campaign to stop their slaughter.