

The professionals, needing a man who will be available to dive come hell or high water, ban all asthmatics from diving, while as amateurs we accept someone who may have to opt out of a weekend's diving.

Our more lenient policy has proved itself over the years by the absence of any recorded serious incidents involving asthmatics.

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THE EARLY DAYS HOW MARVELLOUS WITH AIR!

Don Linklater

During World War II I was a Company Commander in the Torres Straits Light Infantry Battalion. My men had been pearl shell or trochus divers who made their goggles from carved "kapok tree" with insert of glass. Such goggles did not suit me, so I made my own from an army issue type mirror, the de-silvered glass being fixed into a piece of jeep tube split to form four straps which enclosed my head. A friend whom I had trained to dive used such a mask while diving to remove a net fouling the propeller of a ship taking part in the Labuan offensive. I later copied this mask and produced it commercially in Australia.

My men gave me advice based on their diving experience: *"Now you listen true, Captain. If you in front of a deep reef and put your hand in a cave and that hand taken by conger eel, be calm, put your trust in God. Put you head on your arm and pray for the eel to change his bite. When he moves his mouth, punch your hand deep into him then pull one time with both legs and arms, or you will die!"* *"If you are swimming and tide coming and miss your boat and friends, look quickly at the highest coral rock on the reef, tie all the strings you can take and make enough to tie to the rock so you can breathe when the sea is deep and hold on."* I knew of Torres Strait Islanders who spent the night on coral niggerheads, rising and treading water to breathe, keeping their position till dawn and the return of the rescue boat from the lugger, simply saying to their rescuers, "I knew you would come back!" They knew the importance of avoiding panic. On one occasion in Fiji I was in a similar situation. The spill of water over the reef as the tide fell was so powerful that I had to dive and hook my speargun spear into the coral, rising on the cord to breathe from time to time and then progressively changing the anchorage of the spear until reaching the safety of shallow water.

During the war I obtained some Japanese diving equipment from an old pearl-shell warehouse, made up the airlines and put together an old air pump of the manual type. The army would not let me have a sensible boat so I had to make do with an old barge.

My tenders were ex-divers but could not cope with the change of tide or the violence of the water, the worn-out pump bearings which overheated and seized up and the fact that the pump was not tied down firmly owing to a lack of anchorage points. Once when I was in the Helmet at about 100 feet, the pump slipped and slid, changing the barge's balance. Although the men did everything they could, the pump slipped suddenly across the barge and into the water, and down to join me. They dragged me to the surface by the lifeline, lifting me bodily by the neck like a fish into the barge, bleeding from ears, nose and mouth. I was ticked off by my Battalion Commander for trying to get pearl shell for the nurses at Thursday Island and reminded that I was to kill Japanese, not myself.

During my days in the swamps of New Guinea my men swimming with me in the swamps suddenly left the water. They explained that they had seen a black cod among the roots in the shallow water. I asked why they were worried and they said that because the water was shallow and we were looking into the dark, this cod was known to suddenly rush and bite off the lips of spear-fishermen.

After the war I purchased some oxygen equipment from a member of the Navy. The unit contained damp, old, deteriorated soda-lime and he suggested that I regenerate it by putting it out on the rocks on a hot day. When I used it for a deep dive off Sydney I felt very, very queer. Because of the fatalities the Navy later restricted the use of oxygen sets to no deeper than 25 feet and introduced the use of oxygen-nitrogen mixtures. So we dived with compressed air equipment made up from Air Force oxygen bottles and a modified copy of Cousteau's demand valve, and felt more confidence when at depth.

One chap had a small air compressor under his car to be driven by the moving parts. He drove 30-miles with the compressor gathering in the worst atmosphere possible plus the "cracked" lubricating oil used in the cylinder. He was found dead within minutes of diving. I can still remember some of my doubts about early compressed air. I can taste the weird burned oil. I can see the air bubbles breaking on the surface and literally giving off blue smoke!

Among the most dangerous of the early "aids" was a floating mini-boat carrying an extended snorkel, connected to the diver by a long rubber tube. Nothing dangerous happened if the valve system worked and the user was near the surface, but users often passed out because they attempted to draw air down at depth or because the valve was faulty and they were rebreathing their exhaled air, the inhalation tube being too long for flushing if used during exhalation. Near deaths, but no actual fatalities, were reported to occur.

The early snorkels were definitely dangerous and some fatalities are believed to have resulted from carbon dioxide build-up through failure to adequately

clear long/wide tubes, children being particularly at risk in this respect. There were also various ping-pong ball valves suggested. Gradually the clever snorkels gave way to simple short pipes which demanded a complete "spume" to clear, and users found they were clearer headed.

One of the strangest pieces of apparatus was a type of hookah unit, a lever operated double piston pump mounted on a small raft. It required the services of a person to do the pumping and could only achieve shallow depth but many were sold before it was superseded by better apparatus.

The early diving suits were merely a wrap-around of rubber (seal skins) which compressed the woollen garments and minimised exchange of water. Some dry suits were used with the SALVUS rebreather sets, but when the water compressed the material onto the body it was almost inflexible and wooden. The introduction of neoprene foam was the factor which led to the introduction of wet suits.

When I was diving we played with hyperventilation and during a long dive there seemed to be a mental barrier, after which there was another stage. In this dangerous phase there would be a lot of coloured lights, palpitations, flushed face, etc. During an international spearfishing competition in 1965 Wal Gibbons lost consciousness during ascent from a 100 foot dive and was rescued by Bruno Hermany, the Brazilian champion, 30 feet from the surface. He made a successful recovery, though hospitalised and prevented from competing further in that competition. Years ago as I stood on the diving step of a swimming pool in Surfers Paradise some young blades on an outing gave me a slow clap and hollow cheer. The water was dirty but I dived in and on impulse went into my underwater Yoga, slow movement, passing through the mental block. I went the length of the pool four times, and as I had been resting on the holiday and was completely relaxed I think I managed three minutes plus underwater. When I surfaced the manageress was hysterical, the busload of people were looking into the water, some taking off coats and there was a general air of "What do we do now?" I do not dive like that any more, but am aware of the mental release to be triggered by hyperventilation diving, though aware also of the great dangers involved.

Some people are lucky enough to have quickly equalising middle ears but I have been troubled all my life. I tried to get specialists to burn the Eustachian passage clear but was told that would produce damage and was advised to take up sex or stamp collecting instead of deep diving.

With my wife Lois, I have dived through syphons connecting underground river caves at Jenolan. Although we had trained carefully we were caught by the unexpected, the rising of very fine silt changing the incredible visibility to a blackout. It was a case of

stop and pray before doing anything, watching the moving silt across the underwater headlamps to get the direction, slowly following the guide rope where it had been pulled into knife thin cracks. One chap broke discipline and unclipped his line and tore directly through the team. He lived but the panic could have killed him and others.

Panic is a major danger in diving. I remember being at depth in Lord Howe Island Lagoon, caught in a cave with spearline draped around me, fish and coral antlers.

Edward du Cros arrived behind a propelled torpedo, undid the cord (and saved my life) gave an Englishman's controlled nod of the head, and swam off towards the depths. Another time at Lord Howe I and my buddy were in trouble when a current washed us away from the shore. I reassured my companion and we allowed the current to take us out to sea and then bring us back near enough for a swim back to shore. Panic would have been fatal in either of these incidents.

Eric Jolliffe, the black and white artist of Narrabeen, summed it all up a quarter of a century or more ago, when we took him diving with aqualungs - "*Gee, that was marvellous*" he said. We nodded. "*I imagine what it must be like when you have got some air to breathe.*"

We had given him an empty bottle!

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DIVING SAFETY MEMORANDUM NO 14/1982
DIVING BREATHING GASES/PURE HELIUM

Diving legislation requires the diving contractor to provide a supply of breathing mixture suitable in content and of adequate pressure and at an adequate rate.

Diving Safety Memorandum No 11/1981 aimed at drawing the attention of all diving companies to the importance of always supplying a safe breathing gas. The Memoranda expressed the need to ensure that all breathing gas storage cylinders are correctly marked as to their content. It went on to recommend that all gas supplies should be tested before being put on the line and that all supplies to diving bell and divers be continuously monitored for oxygen content and be fitted with a visual/audio oxygen high/low alarm.

Prior to the issue of the Diving Inspectorate Safety Memo, the Diving Medical Advisory Committee to the Association of Offshore Diving Contractors issued