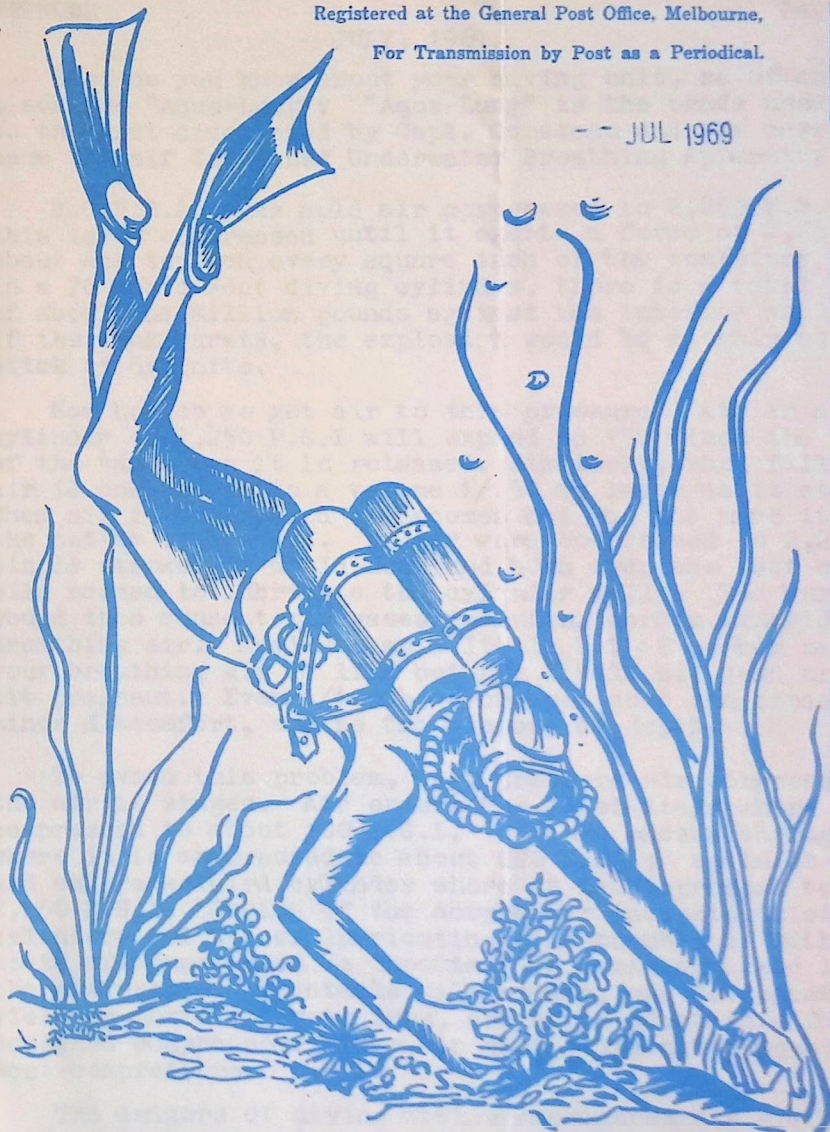


3c.

Registered at the General Post Office, Melbourne,
For Transmission by Post as a Periodical.

-- JUL 1969



FATHOMS



VICTORIAN SUB-AQUA GROUP

JULY, 1969.

What do you know about your diving unit, so often mis-called "Aqua-Lung"? "Aqua-Lung" is the trade name given to the unit discovered by Capt. Cousteau and the correct name is Self Contained Underwater Breathing Apparatus.(S.C.U.B.A.)

S.C.U.B.A tanks hold air compressed to 2,250 P.S.I. and this is air compressed until it exerts a force of 2,250 pounds (about one ton) on every square inch of the container holding it. In a 70 Cubic Foot diving cylinder, there is a total force of about one million pounds against the interior walls. If the tank bursts, the explosion would be roughly equal to a stick of dynamite.

Now how do we get air to this pressure? Air in a diving cylinder at 2,250 P.S.I will expand to 150 times the volume of the tank when it is released. Similarly, when filling the tank air is compressed to a volume 1/150 as large as it started from. When air is compressed it becomes hot and the more it is compressed the hotter it becomes. If air were compressed to 2,250 in a single stroke, it would heat and burn even the best compressor oils needed to lubricate the cylinder walls. The burnt oil would then cause toxic gases including carbon monoxide in your breathing air. Having even a little bit of carbon monoxide in your breathing air is like being a little bit dead or a little bit pregnant. Even 1/100th of one per cent can cause more than minor discomfort, and be troublesome at depth.

To avoid this problem, high pressure air compressors compress the air in stages. Air enters the first stage where it is compressed to about 100 P.S.I. It then passes through tubing where it is compressed to about 600 P.S.I; again it is cooled and enters a third cylinder where it is compressed to the final 2,250 P.S.I. Design of the compressor including sizing of the cylinders and use of lubricating oils capable of withstanding the heats of compression is important in avoiding toxic impurities in the air pumped. Vegetable oils, soaps, and detergents also burn yielding toxic products thus, are not a substitute for a properly designed compressor. They, in fact, will not adequately lubricate most compressors.

The dangers of diving with contaminated air are best shown in Captain Cousteau's book "The Silent World" which is in our library.

..P.T.O.

A short story in this book gives an account of a diver diving in a cave who blacked out and almost lost his life. A quick check showed that the compressor used to fill their cylinders was drawing in exhaust fumes from the engine driving it.

It can be seen from the foregoing that it is essential to maintain your diving gear in tip-top condition at all times. Dive shops in Victoria will not fill a cylinder that is out of test because of the risk of explosion. Most dive shops insist on the cylinder being checked or tested every twelve months; a visual examination of the interior one year then hydrostatic test and rumbler the next year. On the completion of these tests the cylinder is marked with the mark of the shop doing the test and the month and year the test was done. If you are in the habit of taking your cylinder to the same shop for a fill each time the attendant just fills it, no questions asked. But take it to a strange dive shop and the attendant goes over that unit like a hawk, reading the history of tests stamped into or near the neck of the cylinder.

To sum up, get your cylinder tested or checked each year, fill only from those filling stations which you know gives good clean, dry air, and the hit the water, pal, you know you are going to be okay. ..ED..

PAST OUTINGS. "LONDON BRIDGE",
29TH JUNE, 1969.

Due to the inclement weather with high winds, six members of the club decided that the London Bridge venue would have been a wash out, so it was decided to have a dip at the Sandringham Breakwater. After only one hour in the water the frozen members gave it away for the day and headed off to warm homes.

The Frankston Wreck Outing will be included in the August Newsletter.

FUTURE OUTINGS TO END OF YEAR.

July 27th..	Queenscliff.	Oct. 5th.	Channel Fort Ild.
Aug. 10th	Portsea.	Oct. 17th	Phillip Island.
Aug. 15th	Snow Trip.	Nov. 2nd	Apollo Bay.
Sep. 7th	Hurricane Wreck.	Nov. 16th	Anglesea.
Sep. 21st	To be decided.	Nov. 30th.	Walhalla (Gold Di
		Dec. 6th	Club Dinner.

PAST MEETING. 20. 6.69.

At the last meeting of the club we were fortunate to have along Doctor Gavin Dawson of Prince Henry's Hospital. Doctor Dawson gave a most interesting lecture on all aspects of diving, medicine, and then answered questions put to him by various members of the audience. It was gratifying to see members from Underwater Explorers, Monash and Melbourne Diving Clubs present but disappointing to see such a sparse turn up of our own members. Without these visitors the meeting would have been a resounding flop.

During the supper break when one would assume that the lecturer would have been given some respite, estions were still being asked of him and even at the close of the meeting with the building locked up, Doctor Dawson was still answering questions out on the street. It is a pity that those members absent could not share in the interest generated by this very able man.

TO..PETER AND MARGOT MATTHEWS.

The Best Wishes of the club to both these members on the birth of their first child. An 8 lb baby girl at 5 p.m. on 24. 6.69. Both Margot and Merran (a fine old Scottish name) are doing well.

RESTORATION.

The National Trust has been in touch with the Self Contained Divers Federation (S.D.F.) and has requested them to carry out a survey and submit a report on "Cerberus" with a view for the possible restoration of this, the last of the iron-clad dreadnaughts left in the world.

The "Cerberus" was built in England in 1869 for the Victorian Navy, (this was before the Federal Government was formed and each state had their own defence forces) and sailed into Port Phillip on April 9th, 1871, to the cheers of thousands of residents who lined the shores to see her. The Victorian Navy now owned one of the most powerful ships in the world, (only three of these were built) and for years the Cerberus was the most powerful ship in the Pacific.

P.T.O.

She was a most impressive sight as she steamed around her own pond and Victorians slept safe in their beds, secure in the knowledge that Port Phillip Bay was now impregnable.

The Cerberus was an armour-plated two turreted ship of 2,107 tons, and was armed with 4, 18 ton 10" muzzle loading rifled guns and could toss her 400 lb shells 4 miles with fair accuracy. A grant of £200,000 enabled the Victorian Government to buy her.

For many years after federation she was anchored at Williamstown and was a familiar sight to visitors to the area until she eventually became obsolete. She was then dismantled and towed to Half Moon Bay where she was scuttled during the middle of 1926.

There are many references to the Cerberus in the State Library such as the "Victorian Historical Magazine, Vol.22, pages 16 to 22"; "Australian Encyclopedia, Vol. 6 pages 260 to 262 with a picture on page 256"; and references to her sinking in the Argus dated 10th July, 1926, page 31, 14th August, 1926, page 27., and 3rd Sept., 1926.

Your Editor and other members of the group have spent many happy hours diving through the "Cerberus" and access is gained through the many holes in her hull that are below the water line. Once inside and up through the holes in number 2 deck it is possible to stand up and roam around. Under number 2 deck it is possible to swim from one end to the other but is not the easiest thing to do and it is easier to leave each section through holes in the side, then swim on to the next section and repeat the performance. In the stern section of the ship a torch is essential as it is quite dark through openings in the top deck being sealed.

SNOW TRIP MT. BULLER 15TH AUGUST. 1969.

Reports indicate that this outing will be a sell out and I suggest that all members who are wishing to go come to the July meeting and book. This will be the last meeting before the trip and the last opportunity of gaining a berth at one of the lodges.

"CLUB DUES".. The end of the financial year is with us one again and much as I hate to draw your attention to it, fees are due again. The Treasurer is only too willing to collect your fees and I would like to draw your attention to the fact that only financial members can vote at the Club's Annual Meeting. Pay up now to enable your wishes to be gratified through your vote.

CLUB DINNER "THE BARREL", 6TH DEC., 1969.

Get your deposit in now for the Annual Dinner. All deposits must be paid by 30th September, 1969, (\$1.00) and balance of \$4.00 by 31st October, 1969. You don't want to miss out on this ding as you can have a mighty time with your mates..

LEGISLATION.

It has been brought to the attention of the Editor that the New South Wales Government has banned the use of spear guns whilst using S.C.U.B.A. gear. This is now law in Tasmania and South Australia.

It may well be that Victoria will follow suit to prevent the decimation of fish stocks.

NEXT MEETING 18TH JULY, 1969. The next

Meeting of the Group will be Held at Youth Hostels Hall, Gisborne Street, Eastern Hill at 8.00P.M.

COME ALONG AND MEET YOUR MATES FOR A CHIN WAG!

Bye

Bye.

Ed.