

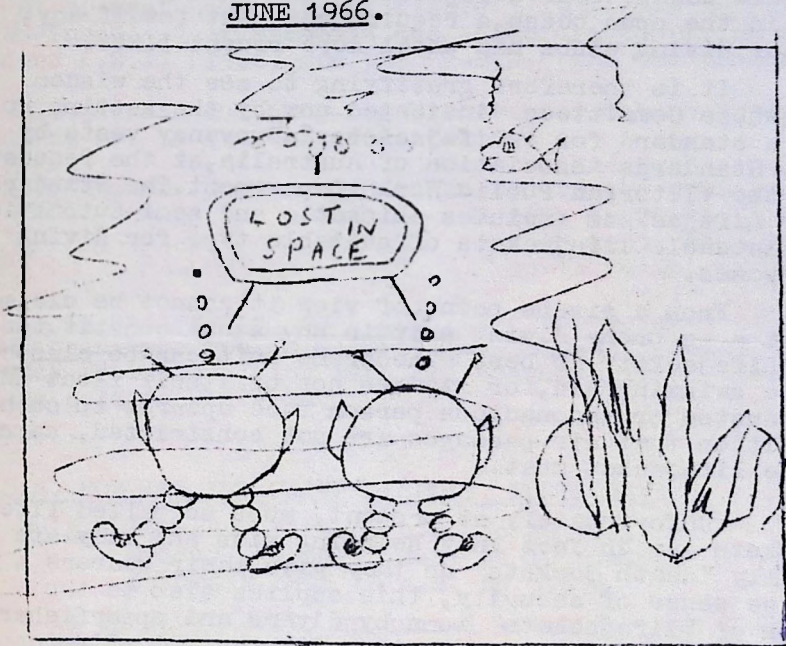
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Page 1.

FATHOMS

JUNE 1966.



I wonder what they would say if they knew
we really existed!

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EDITORIAL.LIFEJACKETS.

The benefits to be derived, in emergencies, by divers wearing lifejackets were seen by the experienced and foreseeing Committees of the Group some eleven years ago when they wrote into the Rules and By Laws that divers had to wear lifejackets when diving from boats or in the open ocean, a requirement that few, if any, other diving clubs had until more recent times.

It is therefore gratifying to see the wisdom of those Committees vindicated now by the setting up of a standard for 1. Lifejackets 2. Buoyancy vests by the Standards Association of Australia, at the request of the Victorian Public Works Department. The Standard for Lifejackets includes automatic and semi-automatic inflatable lifejackets of suitable type for diving purposes.

From a divers point of view it cannot be claimed that a neoprene diving suit, in any sense constitutes a "Lifejacket". At best a neoprene suit can be classed as a swimming aid, for it does not of itself float an exhausted or unconscious person face upwards in such a position that air passages are not constricted, as any true lifejacket must.

Unfortunately at present, most so called life-jackets are in fact only swimming aids and many are really "death jackets" as they give their wearers a false sense of security, this applies also to the bulk of "lifejackets" worn by divers and spearfishermen. Responsible people in boating, fishing and swimming spheres have supported the Government in seeking a Standard for "Lifejackets" based on their knowledge of the needless, tragic loss of life which occurs every year from drowning.

The support of such bodies should convince all reasonable people, taking their livelihood pleasure or recreation in the water, of the need to wear or have handy for an emergency, adequate protection in the form of a suitable and approved standard Lifejacket.

When purchasing a Lifejacket or Buoyancy Vest, ensure that they are stamped with the marking A.S.Z.27 (1966) for Lifejackets and A.S.Z.28(1966) for Buoyancy Vests. This is a purchasers assurance that the lifejacket or buoyancy vest complies fully with the requirements of the Australian Standards Association.

At present the only inflatable Lifejackets approved by the Marine Board of Victoria and therefore complying with Standard A.S.27 (1966) and the "R.F.D." and the "Beaufort".

Lifejackets and Buoyancy Vests under the abovementioned standards are in four sizes as follows :-

1.	Suitable for persons of weight	90 lbs and over	-	Size	4
2.	"	"	"	50lb to 90 lb.	3
3.	"	"	"	25lb to 50 lb.	2
4.	"	"	"	Up to 25 lb.	1

It is anticipated that the Victorian Government will bring in legislation to ensure that only lifejackets and buoyancy vests complying with the abovementioned standards will be sold in Victoria.

Y.M.C.A. HOBBIES AND CRAFT DISPLAY, FOOTSCRAY

July - Thursday 14th 6 p.m. to 10 p.m.
 Friday 15th 10 a.m. to 10 p.m.
 Saturday 16th 10 a.m. to 6.p.m.

This is practically an annual event for our Club, where diving gear is displayed, diving techniques demonstrated in the heated pool, and diving discussed with interested visitors. This year the display will be bigger than ever, and people are wanted for the duty roster, both at night, and if possible, during the day. Ten thousand people are expected to pass through the exhibition this year, so it is a good opportunity to 'sell' diving in a big way. If you feel the stirrings of a salesman, a teacher, or just plain 'spruiking' in you, contact Frank Coustley at 28.3910.

DIVERS' DISEASES

The diving diver. He either retches or sleeps noisily on a boat trip. He suits up in time to keel over from heat exhaustion. When he is helped into the water he bobs up and asks for his weights, which he then proceeds to lose. He comes back without crayfish, abalone, fish or treasure, but the usual fishy tale of having sighted the largest fish ever seen by man. He is always voicing regrets at not having a decent spear gun, and invariably throws his voice on a return trip. At home he tells everyone he had a wonderful trip.

The Homecoming Diver. He is generally wet, dirty and exhausted. Tends to smell gamey and rank. He comes into the kitchen, and unloads the day's collection of squid, parrotfish, and abalone into the kitchen sink, and with pride in his voice, says "cop that lot, sweetie, you won't need money for meat this week". He then flakes out in the lounge room, and noisily dreams of crayfish (R.B.) Poor wife gets out the Airozone, and wishes she'd stayed single.

INSURANCE

Members are reminded that the Group is Agent for all forms of insurance cover, particularly All Risk. All members should have their gear insured as this affords them protection and the commission enhances the Group's finances. Some members have already benefited from their foresight in insuring their gear; if your equipment has not yet been insured, contact John Noonan at the next meeting.

PICTURE NIGHT

This was the usual success, for which we must thank Tony Sierak, and Brian, our social organizers. Thirty nine tickets were sold, the profit

was \$24.21 and an enjoyable evening was had by all who attended.

COMMITTEE MEETING

Two main items of interest arose out of this meeting.

1. Handbook. Pages are printed and will be distributed to members as soon as possible.
2. Manual. It has been proposed that a Sub-Aqua Group Manual will from time to time, contribute technical articles on any subject connected with diving which interests them. E.g. Basic Training Procedure, Basic Diving Equipment, Basic Physics of Diving, Diving Hazards, Diving Technique, Scuba Diving Accessories, Compression Tables and Applications, Scope of Diving, Modern Advances in Diving, Underwater Vehicles, Underwater Houses, Underwater Photography, Underwater Geology, Marine Biology by the Diver, Special Breathing Mixtures, Diving Diseases and prevention and treatment, Hard Hat Diving, Marine Salvage, Underwater Communications and Diving Locations.

Contributions will be filed in folders which will be available to members. It is envisaged that those who wish to take "A" Grade Certificates will be required to add a contribution.

MEETINGS.

Past: The last club meeting was attended by twenty members the evening was pleasantly whiled away in social activity.

Future. The next meeting will be held at Scots Church Hall, 99 Russell Street, at 8.p.m. on 17th June.

SUPPER. Would SOMEBODY PLEASE REMEMBER to bring supper.

FUTURE OUTINGS. 11th to 13th June. Cape Liptrap.
Camping ground at Walkerville North. If the weather is good, excellent ocean diving can be assured off Liptrap, with possibility of a few crays.

NOTE. This has been a change from the outing in the outings list, (Changed from Port McDonnell).

SNOW TRIP. Your last chance at the next meeting to book with Frank Coustley for this trip on 22nd to 24th July to Mt. Buller. Change your sport for one weekend!

UNDERWATER RESEARCH GROUP.

The inaugural meeting of the URG held on Thursday 5th May was an outstanding success. Instead of the few people expected, 43 turned up, more than well filling the available space in the rather small lecture theatre.

To date the Secretary has over 70 people on the books, most of whom seem to be very keen on the idea of learning about marine life.

Club members may have seen a notice in the 'Herald' announcing the formation of the Group. This has elicited many enquiries from Divers outside the S.D.F. clubs, mainly U.S.F.A members, who all seem to have the idea that diving clubs do not spear fish AT ALL! and from boys, age 16 down to 11 years who were given the entirely mistaken impression from the article, that we would train them, free of charge.

The next meeting of the U.R.G. is tentatively set at 7th July, the place to accommodate such large numbers is yet to be found, and the speaker will be Mike Sanders of Fisheries and Wildlife, who will speak about the scallop program in the Bay, Anyone not on the U.R.G. circulation please ring Jan Watson, 337.9263 for details of meeting place, later.

SEA SCIENCE SECTION.

Pressure. Pressure is energy, whether hydraulic or compression, energy of air in bottles. How much energy does the diver deal with? The figures are large. A 70 cubic foot bottle at 2000 psi has roughly the capacity for 400,000 foot pounds of work. This is equivalent to the potential energy of a 2000 pound weight suspended 200 feet in the air. To put it in terms of our automotive age, it is equal to the energy in a 2000 pound car cruising at 55 mph.

A different comparison can be drawn with rockets; simply breaking off the $\frac{1}{4}$ inch valve nipple on a 25 pound tank at 2000 psi would create a jet capable of accelerating the tank to 40 mph in less than 10 feet. Moral: Don't mistreat your bottles.

Every foot of water overhead adds another 9.43 psi to the body. At a depth of 33 feet, air at twice atmospheric pressure is being taken into the body. At 50 feet, the pressure is about 22 psi, or about what goes into the tyres of your car. At depths of 600 feet, where dives have been made using 'heliox' mixtures, the ambient pressure is 260 psi 160 psi more than is used in rock drills and pneumatic tools!

The ill effects on the body of high pressure is due to the absorption of nitrogen into the blood stream, Henry's Law states - the amount of gas absorbed in a liquid is proportional to the pressure of the gas. Thus, as we know, the deeper we diver and the longer we stay, the more N_2 is absorbed into the blood stream. Whilst pressure is maintained, the N_2 content of the blood is harmless, but when pressure is relieved, the N_2 is liberated into the blood. If this done slowly, using the diving tables as a guide for decompression, it is harmless, but if released quickly gas bubbles form, with the resulting 'bends'. For average dives of up to 60 feet, using a 70 cubic foot tank, this is harmless, but if one goes deeper, or uses twin 70's, then attention must be given to decompression.

Impurities in air supply.

The composition of air is as follows:-

Oxygen - 21% Carbon Dioxide 0.03%.
Nitrogen - 78%

Rare gases, Argon, Neon, Krypton, etc. - difference. Impurities which can exist in air, and thus get into diving air supply ~~xxxx~~ are, water vapour, dust, oil vapours, and carbon monoxide. Impurities can be dangerous, each for a different reason. Carbon monoxide (CO) is most deadly, as it can combine very readily in a chemical reaction with the haemoglobin of the blood, instead of the oxygen with which the haemoglobin normally combines. The O₂ - haemoglobin reaction is reversible, the oxygen being released readily when required by the body. However, the CO - haemoglobin reaction is irreversible and therefore permanent, and thus each haemoglobin molecule which combines with a CO molecule is put out of service as far as oxygen carrying capacity is concerned. This if CO is inhaled, the haemoglobin rapidly becomes saturated and insufficient O₂ reaches the brain, causing unconsciousness, and rapid death.

The tolerance level for CO is very small, being,
100 ppm - headache (ppm - parts per million)
200 ppm - severe headache
500 ppm - - death if breathed for one hour
4000 ppm - death in few minutes.

When twice the volume of air is breathed at 53 feet as at the surface, twice as much CO, if present, will be inhaled. The chemical affinity of CO for the Haemoglobin remains the same, so that all CO breathed in will combine. This, what may give a headache at the surface could well become fatal over the duration of anormal dive at a normal depth.

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MEDICAL

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EXAMINATIONS
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ARE DUE

ARE DUE
for some members.

ARE DUE

FORMS FROM SECRETARY