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R.N. Diving Magazine

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Vol. 10

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No. 1

Editorial

WELL, here goes for my first solo run as Editor of this Magazine.

Petty Officer Mike Brassington has at last been uprooted from *Vernon* and transplanted down in the land of 'oggies'.

I must admit there was a few dark clouds of doubt hovering overhead when I first took on the job — 'Oh Lor! What have I let myself in for?'

However, these soon blew away due to the first class 'turn over' and tips given by my predecessor, plus what I have found out for myself since.

I was greatly surprised to find out what all this 'editing caper' entailed — believe you me, it's quite a turn up for the book. In actual fact I have scribbled a small article on the subject of the Magazine, further on of this edition. This will possibly give you a small insight into the work that is carried out to produce your Magazine, and also what happens within the hallowed walls of the magazine office.

When, like you, I was just a humble reader of the Magazine I noticed many pathetic pleas for articles from the Editor — now I can appreciate those longing words for help.



Once again the hue and cry has to go up for more articles to print in the magazine, particularly from teams or any other body of divers who have been engaged in some sort of work or other out of the ordinary.

I would much sooner be in a position where I could say 'Thank you for your article, it will go in next edition of the magazine as the present one is full,' rather than have to keep on hounding people.

Other from that, many of our articles are often entered by the same people time after time, so why not give them a rest for a while and put pen to paper yourselves.

Anyway, this is something I would like to hope for — come on, have a bash at it, it won't hurt you and others will appreciate it.

EDITOR.

P.S.—For the benefit of Past and Present Clearance Divers, the Divers Dinner will be held as normal at the end of the year.

Message from the Captain H.M.S. 'Vernon'

"In my two years here I have watched with much pleasure the good work put in by all types and ranks of Naval Divers, both in trials and in training. Courage, resource and good teamwork seem to me to be the hallmarks of the good diver, and these qualities have been displayed to the full.

It has been most gratifying to see how well the training side have swung into action to meet the much increased demands for C.D's, S.W.D's and F.D's in the Fleet. Training resources have been stretched to the limit, but the position is now much improved and we should be up to scratch in numbers by 1965. Even during the Great Freeze ice was broken and diving continued in Horsea Lake, and *Vernon* Creek was hardly a welcoming spot; still, the work went on and failures were no higher than usual.

Deep diving is gradually coming to the fore again and we must all give a cheer to *Reclaim* and her team for their fine work. The 'Aircrash' Deep Diving Team are now poised



ready for transfer to Plymouth. I am sure that deep diving is going to grow in importance as such things as nuclear submarines, aircraft and missiles are too valuable to be

abandoned below 30 fathoms. It is very pleasing to see the Royal Navy firmly in front once more. Long may it stay there.

The Bomb and Mine Disposal men have had their share of tough going too; I read all their reports with interest and follow with admiration their good work in all sorts of conditions, world wide. I hope the new Port Diving and Bomb and Mine Disposal organisations will meet modern requirements by enabling these teams to perform as self-contained units, independent of the diving schools.

I hope all Service divers will remember that they are the most important and fully integrated branch of underwater warfare and that *Vernon* is now their alma mater in every respect; the career prospects of every officer and man in the diving branch is uppermost in our minds all the time. I am constantly on the lookout for opportunities to widen the horizons of the Diving Officer and the Naval Diver in general. I hope that all Service divers, officers and men, of whatever branch, will always bear in mind two things:—

1. That they are primarily Naval people and as such are fully expected to take their turn at all the duties and responsibilities of their own branch,

in addition to their Diving capabilities.

2. That Diving is not just an exciting form of expertise existing merely to further its own ends. It is a most highly important part of the maintenance of the Navy and of the safeguarding of its ships. There is no doubt in my mind that in any future limited war or emergency the need for courageous and resourceful divers will once more emerge as of prime importance.

Finally, as a non-diver, I should like to say how much I have admired the way the diving world has grappled with its problems and has made such steady and sure progress. The team spirit among you all is good to see, both in your work and in your play (*Deepwater* does however occasionally get a run for their money from other people)! I have the utmost confidence that you will continue to tackle the questions of today and tomorrow with the same mixture of daring and caution that has stood the test of time in the Royal Navy's diving endeavours in the past.

Goodbye and good luck to you all."

CAPTAIN H. L. LLOYD, D.S.C.,
Royal Navy.

Deep Diving Trials from H.M.S. 'Reclaim'

by LT.-CDR. G. M. H. DRUMMOND, R.N.

H.M.S. *Reclaim* with 11 extra officers, divers and civilians embarked, thankfully shook off the snow and sailed for Santa Cruz de Tenerife in the Canary Islands, on 2nd January 1963. A period of five and a half weeks had been allotted for Deep Diving trials.

The programme was a continuation of that started in the summer of 1962 when the ship paid two visits to Norway. There were two targets at that time. Firstly, to prove that the technique of operating a diver with S.D.D.E. from a Submersible Decompression Chamber (which had



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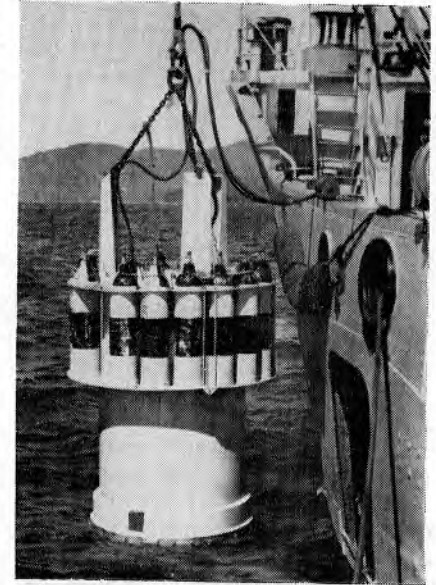
been successfully used to 180 feet in August 1961) could be safely extended for use with oxy-helium mixtures. Secondly, to try out new decompression schedules which were aimed at sufficiently reducing the total time under pressure to make this type of diving a practical proposition.

At the end of the Norway trials, air dives to 250 feet had been successfully carried out and the technique had also proved quite successful with oxy-helium mixtures for dives to 300 feet. However, a safe decompression schedule for this depth had not been arrived at. Accordingly between the end of the Norway trials and H.M.S. *Reclaim's* departure for Santa Cruz a programme of Recompression Chamber dives was carried out. At first troubles occurred and the schedules had to be modified, but progress was gradually made and when the ship sailed there were schedules for 300 feet dives for 10 and 20 minute periods for trials in the sea. A start had been made on the 400 feet/10 minute dives and it was hoped to continue these on passage. However bad weather prevented this until the last day and so the first few days at Teneriffe were also spent on R.C.C. trials.

Space does not permit of details of the various schedules tried and the changes that were made as a result of the — happily — minor Bends which occurred; the difficulties of mooring in depths of over 80 fathoms; the eight and a half tons of replacement anchors which had to be flown out from England; the 'high altitude Bends' on the divers' bus trip up the local mountain (no fun at all for the victims) or the goings on at the Copacabana. I will describe the general procedure and give some idea of the progress that was made.

For the uninitiated, H.M.S. *Reclaim* is equipped with a Submersible Decompression Chamber

(virtually a diving bell with a door at top and bottom) which can be hoisted inboard and locked on to a special recompression chamber after which the divers, still under pressure, can be transferred to the larger chamber. This has two compartments so that a Doctor — or for that matter a cup of tea — can be locked through at any time during decompression. Fortunately the former was not needed during the recent trials, and unfortunately, the latter would have been no use because the divers were breathing oxygen and so had mouthpieces in.



The drill is as follows: the S.D.C. is hung over the side from a derrick with the lower door open and submerged about a foot. The two divers, in underwater swimsuits, then get in, don fins and S.D.D.E. sets (but not facemasks) and report when ready to leave. For dives of 300 feet and more the S.D.D.E. sets are supplied with an oxy-helium mixture from a bank of 150 cubic feet cylinders fixed round the S.D.C. Each set has a

30 foot length of hose. When ready the divers are lowered to the working depth. As they go down they control the amount of air coming into the chamber to maintain the water at a convenient level — say 2 feet — inside it. (Don't ask Sarge!) On reaching 100 feet the chamber is momentarily stopped while the divers put in their mouth-pieces — that is changing from air to

minutes or longer and on reaching it the lower door is closed. The S.D.C. is then hoisted inboard and the divers are transferred to the recompression chamber. Here they are supplied with oxy-helium or pure oxygen depending on their depth. All further stops are controlled by the T.U.P. Panel Operator who also changes over to oxygen at the correct depth — normally 50 feet.

This has proved a very comfortable and straightforward diving method so far. The divers are lowered to their job 'in the dry' as if they were in a lift, suit inflation is provided to enter the suit by the neck seal and the divers, all the time they are on the job, not only have the confidence that their 'buddy' is not far away but also have the feeling that the chamber is right by them for them to duck back into in the event of trouble.

So much for the drill. After a pretty comprehensive series of trials in the R.C.C. schedules were available for 10 minutes dive at depths of 300, 400 and 450 feet. Altogether we did 36 dives at 300 feet, 16 at 400 feet and 6 at 450 feet. If time and helium supplies had allowed, at least six more 450 feet dives would have been done. Out of these 56 sea dives we had three Bends, none of which required more treatment than Table 1, so that we feel justified in thinking that real progress has been made. We now have behind us not isolated dives by a few individuals but, thanks to the efforts of a team in which every member played an essential part, a number of dives at each depth which are capable of safe repetition by different divers. We thus have a firm basis on which to found working schedules for these depths and from which we can work out schedules for trials to greater depths when H.M.S. *Reclaim* is again available.



S.D.C.

oxy-helium. On reaching the working depth one diver goes out of the chamber while the other acts as his attendant. During the trials the divers changed round, on the orders from the surface, half way through the dive. Two minutes before the time to leave the bottom the second diver is called in and the divers signal when they are ready to leave the bottom. They are then hoisted, at a carefully controlled rate, to the first stop and then through subsequent stops to the 'Transfer Under Pressure Stop'. This is usually the first stop which has a duration of 10

Our Jock

As long as reducing valves need fixing, the name of Jock Campbell will be remembered. For the very nature of a reducing valve, or any valve for that matter, depends upon the precise way in which the specialist nurses it into existence and from then onwards keeps a fatherly eye on its performance. In this process, Jock is among the most supreme of specialists, for no moving part, no plastic seating has passed through his hands without critical and constructive scrutiny, followed by a touch of improvement where necessary. Many a microthou has been shaved where others would have left it, for a clean passage is vital to peak performance.

the drips, never let it be said that the tiffey's mess was a dull place in Jock's boat. God help any coxswain who refused to join the boys and let the depth charging crack a few more jars. 'After all, Churchill said we could take it and he must have been right'. The spirit of human understanding, clupled with the hard work and ruthless efficiency that Jocks types experience in those troubled times, could well be reinstated these days.



His knowledge and ability in this field, stem from many years of sea time in the submarine service. The rectification of sudden and unexpected mechanical faults 'at depth' were second nature to Jock before most of us had left our cradles. The ideal submariner — he is still capable of working long hours steeped in lub oil and breathing diesel. Draped across a stripped muffler, with all manner of tools hung round him, he would somehow fix it whilst the enemy thundered overhead. Then, in the intervening periods of relaxation, he was always the heart and soul of any party. With cotters on the vents and tickler tins up to catch

With this background, he joined the diving mob and so commenced the further period of invaluable service which he has given to the underwater cause. Nothing was ever too much trouble for Jock if he felt that blokes knew what they were doing and weren't just mucking about. In the 1949 era, you'd come off on R.M.S. job with a bottom crawling Mk II and old Jock would turn out and help you fix the bow plane linkage so you could catch the tide first thing.



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Just the flipping job, and there is nothing like keeping going on development work once you've got your teeth stuck into it, particularly if it is proving its effectiveness at sea.

His work in connection with the development of deep diving gear and breathing apparatus has been ceaselessly progressive; always there has been some little snag or problem which has needed sorting out and Jock has usually been able to put his finger on it straight off. This is undoubtedly because of his long experience at sea with equipment under working conditions. Jock has always had a healthy respect for the true seaman's

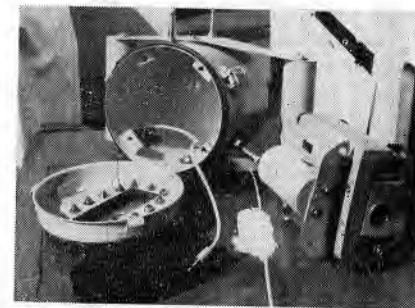
knowledge and ability, for it is only after working at sea for many years, interspersed with periods of intense activity and hazard that a true appreciation of the seaman's problems, as affected by science and engineering, can be gained. But it would not seem that one upmanship has surpassed seamanship as the prime mover of progress in maritime activity and so we must pass on with progress to a new era, whilst the old stagers gracefully retire. Bless you Jock from all the diving world and may your pumps and valves keep going for many a year yet.

J. BROOKS.

... And \$(HK)20 for the Paintwork

SOME time ago I came across a watertight tin, a canister for one of the smaller types of torpedo pistol in fact, and the thought crossed my mind 'That would make an underwater camera case someday'. So away it went into the 'come in handy box'. Recently, in Hong Kong, looking over the plentiful assortment of cheap cameras, I discovered the 'Elmo Pocket Auto' whose vital statistics were — f 1.8 lens, fixed focus, automatic coupled exposure meter, electric drive and remote control. All this packed into one of the smallest 8mm. cameras have seen and at quite a reasonable price — £15. 'Thanks', 'That would make a good underwater camera', So, we were in business.

integrity. The solution was found, however, by raising the window, $\frac{1}{4}$ inch perspex, on a packing piece of the same material and bolting the whole arrangement together with copious quantities of Bostik Clear and gaskets 'proof against steam, oil, petrol and greases'. It did not mention water but there have been no leaks there as yet.



Having bought the camera and recovered the tin the design stage began. The first problem was that the camera was too big for the tin. Basic?, well yes but, one tends to miss some of the minor details when taking the broader view. This problem was soon solved by cutting a hole in the lid and allowing the camera to poke out. Of course this did little to help the watertight

A piece of aluminium was then bent into the most extraordinary shape (see photograph) so that it fitted across the bottom of the camera and up both sides ending in two flanges, protruding sideways near the front, with which the whole contraption could be bolted to the

original pistol lugs in the canister. This carrier was then lined with cloth to protect the paintwork of the camera (and keep its resale value up) and a hole drilled to take the tripod screw. To the back of the left hand flange was secured a bracket to carry the remote control batteries and switch which were secured with plastic insulating tape. The other flange had the lid of a much mutilated throat tablet tin (light aluminium)

bolted to it so that a dessicant could be added to prevent misting.

The handles were made from the centres of ASDIC recorder paper rolls (a use for them at last!) and secured to the canister by two aluminium plates. Holes were drilled top and bottom to allow free flooding and thus avoid pressure problems. Perspex spacers kept the handles in place on the central brass

rods which ran between the ends of the plates.

The one thing now lacking of course, was some means of operating the camera from outside of the can. As the need for this was fairly obvious it was given immediate attention. The camera was fixed focus, fixed speed (16 frames per second — Cine), automatic exposure and electrically driven so all that was required was a 'GO' button. The circuit of the remote control was as shown in Fig. 1. The push for normal use and the switch for continuous running. I broke the circuit at the point marked 'A' and inserted the socket of a miniature 'phone jack fitted in another, smaller, throat tablet tin (it's the climate y'know). This socket would complete the original circuit until the jack was inserted when the external wiring of the case would be included. Fig. 2. Hence, if the 'continuous run' switch was made, the camera would run whenever the wires from the jack were connected. These wires were led to two small bolts which passed through the wall of the can, in insulating materials, into a perspex junction box on the outside. A heavy piece of plastic covered cable took the circuit from here into the right hand handle.

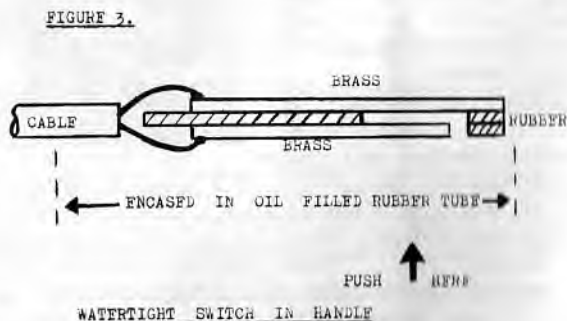
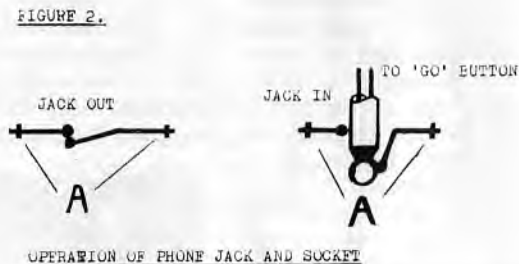
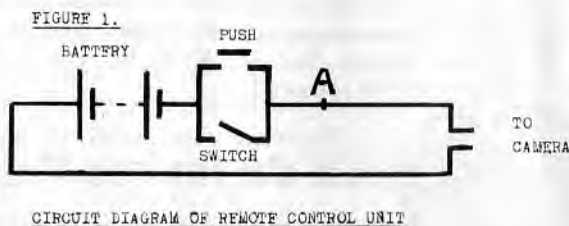
Innumerable types of switches were tried but eventually a suitable one was made. It consisted of two strips of brass with a strip of rubber sandwiched between them for most of the length. A rubber tube was fitted over this and sealed onto the cable at one end. The tube was then filled with oil to prevent the switch being operated by sea pressure and the remaining end sealed—Fig. 3. If one was lucky enough to find the right spot, the tube could be pressed and the camera would run.

A hole was drilled through the brass rod in the centre of the handle

and the tube secured to the rod with its tender spot opposite this hole. A short brass rod attached to a plastic button passed through the hole and another in the handle so that the button was just proud of the rear face of the handles. The controls were now complete with NO moving glands through the case.

A friendly O.A. turned up a pair of spike sights from a piece of brass rod and the case was now ready for painting.

Now, you might think that having a tin can and two metal plates painted by a professional spray painter is a fairly simple process, but when the painter only speaks Chinese this is not so. I duly presented myself, complete with the parts of the case, at a car spraying shop in Wanchai and indicated that I would like the pieces painted by waving one of his spray guns in the general direction. The gun was loaded. Having cleaned up the worst of the mess the painter then took up the can and was about to paint it green which was the colour in the gun. A quick shout, waving of the hands and snatch prevented this and I showed him a piece of paper which was the colour I wanted, bright yellow. He smiled his understanding and painted the paper green. Having thus lost my sample I then looked around for something else in the right colour and caused considerable amusement to the rapidly growing crowd as I tried to point out a yellow car which flashed around the corner. It had to be a taxi, and seeing my wave promptly stopped. Having once got the idea that I did not want a taxi and that I would under no circumstances pay for his flag-fall the driver became quite useful as an interpreter. At last my wishes were conveyed to the painter. The taxi drove off and the painter painted all the pieces white. I gave a strangled



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cry and pointed to the yellow paint. He grinned, waved and gave them another coat of white. I gave up and went next door for a beer. Ten minutes or so later he appeared in the doorway and called me back to the paintshop where the can sparkled in glorious yellow. Apparently the white was an undercoat. He then wrote the price with his spray gun in letters three feet high on the wall and I went back to finish my beer.

The next stage was assembling the parts. Each joint and bolt was sealed with rubber washers and Bostik Clear A leather cover to protect the perspex and a nylon lanyard completed the job.

When next at sea I sent the case (WITHOUT the camera) down to 120 feet for five minutes. It came up, not flat as I had half expected, just slightly dished at the back and

holding about a thimbleful of water. In Perth I procured a tyre valve of the bolt on type and a small pressure showed the leak to be in the junction box. This was resealed, the test repeated (with a pressure in the case this time), and it was declared to be in all respects ready for sea. One or two small weights glued inside corrected the buoyancy and trim and filming commenced.

This article has been written before the first film has returned from processing — just in case.

Costs were very low as much of the materials were scrap pieces. Camera \$(HK)245, nuts bolts and brass rod \$(HK)3.50, 'phone \$(HK) 1.00, Tyre valve 6/6d. Aust., Glue \$(HK)2.50 and \$(HK)20.00 for the paintwork.

B. M. COMMONS, LT., R.N.Z.N.

Where do we go from here?

by LT.-CDR. S. A. WARNER, D.S.C., ROYAL NAVY

THE year 1962 saw many changes and advances in diving equipments and techniques. The Royal Navy, who for decades had been the leading exponents of the diving art were overtaken in some aspects by such individual teams as those led by Hans Keller and Commandant Cousteau and I consider that much credit must go to these two men for injecting a sense of progress into the general complacency which had shrouded diving.

Hans Keller has in fact dived to 1,000 feet and claims that his methods will make diving anywhere on the Continental Shelf a practical proposition.

Commandant Cousteau has proven that it is practical and apparently safe to maintain divers underwater for periods extending into weeks.

He has also shown that the divers, during this period, can carry out a working routine underwater much the same as man does on the surface.

In addition to Keller and Cousteau many other people have been progressing the diving art recently. Dr. Edwin Link has carried out trials aimed at extending the diver's time underwater. The Italian firm of Micoperi are using high oxygen content gas in standard equipment so reducing the equivalent air depth to one which requires little or no stoppages during ascent.

The Royal Navy have once again taken up their investigations into deep diving, and experimental trials are progressing aimed at producing a safe technique for diving in a flexible suit to beyond 1,000 feet.

There is no doubt that after years

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of apparent stagnation considerable research is now going on throughout the world into progressing diving equipment and techniques, so what better time than now to try and assess the aims and objects of all this effort?

First and foremost I think that we must accept that nothing but good can come from properly organised and properly channelled research. Deeper and longer dives carried out in these various research programmes will eventually lead to safer and more efficient diving in general. We have only 'scratched the surface' of the problem of living underwater but this does not mean that we are completely ignorant of the difficulties. Far from it, everybody concerned in diving is acutely aware of the barriers which have to be penetrated.

The problem of diving to 1,500 feet or if you like being subjected to approximately 667 lbs. per square inch is well within the physical capabilities of the human frame, but the production of the safest breathing gas mixtures, the rate of ascent and the correct stoppages present problems of considerable magnitude. However, there is little doubt that in spite of the difficulties we may well see dives approaching these depths in the comparatively near future. The application of this capability to provide a useful service is another problem.

Let us take a look at the requirements for all this new thought and action.

At the head of the list is the need to improve the safety and efficiency of our present techniques. Such things as longer working time on the bottom, speedier ascents, improvements in the comfort of the diver will all add to efficiency.

The cultivation of the ocean as a means of increasing the world's food

supplies obviously provides much scope for research.

The capability of diving anywhere on the Continental Shelf is claimed in many circles as an essential requirement.

As has already been stated, properly organised and properly run research can produce nothing but good for all diving so let us now consider the problems involved in the cultivation of the world's seas and sea bottoms. There is no doubt that there are millions of underfed people in the world today. The fact that this is not entirely due to shortages of food does not detract from the idea of cultivation of what is almost two thirds of the earth's surface which at present is almost virginal in this respect.

Commandant Cousteau has suggested that very soon we shall have underwater farmers actually cultivating the ocean bed and he has gone so far as to say that 'in my opinion, within 50 years, a race of humans will develop who will live almost entirely underwater'. He has also stated that these 'homo-aquaticus' will have their lungs filled with liquid and a means of injecting oxygen into the bloodstream will be devised. In other words evolution in reverse assisted by surgery. I personally cannot subscribe to this opinion at all.

However, I agree that we must look to the world's oceans for more and more food but I do not believe that the use of divers as underwater farmers is the best line of action.

We must also remember that the term cultivation must be used in its true sense because experience has already shown that indiscriminate fishing can denude an area of fish.

We know two very important factors about fish life. One is that fish are potentially prolific breeders

as a general rule but, because of the predatory habits of other undersea life, and because of disease, the survival rate is infinitesimal. The second fact which has been established is that the growth of many fish is dependent on water temperature.

Much work has been done at the Fisheries Laboratories at Lowestoft based on this knowledge, where they have found that it is possible to breed fish at a fantastic survival and growth rate in tanks under controlled conditions. It is this approach to the cultivation of the sea that I subscribe to.

Whilst not suggesting that Cousteau's idea of maintaining divers underwater for long periods is not applicable to farming the sea bed, I feel that this technique may have a bigger application in construction work, salvage or surveying for oil and minerals and like tasks. On the other hand I am not convinced yet that it is safe to subject divers to such prolonged periods under pressure with the frequent changes in pressure that this technique involves. It has already been established that such conditions can lead to serious bone change in the human frame in the long term and I am of the opinion that we require considerably more knowledge on this problem before these long periods under pressure can be justified.

From the 'surface' harvesting side, much work is still to be done on design of fishing nets and their methods of use so that fish are caught more efficiently without destroying the immature fish or damaging the natural feeding conditions or the sea bottom. In this line of research divers have already done a great deal but there is undoubtedly more to be done.

The capability of diving and carrying out work at greater depths is another line of research which has

considerable impetus at the moment and there is little doubt that the physiological problems of diving to these depths will be solved. However, the amount of work that a diver can do at, say 1,000 feet still has to be resolved but we suspect that his ability to carry out any manual work will be limited. The practicability of actually employing divers at these vast depths, where the time on the task is severely limited, and their ability to work is suspect, must be in doubt.

In addition the problems involved in getting a diver on the bottom in a specific spot where his task is (e.g. a crashed aircraft) produce immense problems in such things as location, and mooring for the operating vessel to say nothing of the effects of wind and tide on all aspects of the operation. It may well be found that the pure seamanship problems will produce the limiting factor especially if the operation is carried out from a surface ship.

To carry this line of thought a step further it would seem logical to consider the control of deep diving from a submersible, bottomed adjacent to, or actually moored underwater just above the task. In other words a submarine fitted with air locks and compression chambers would act as the base vessel. This approach might possibly decrease the location problem and would certainly reduce the effects of tide and weather. The diver's complete descent and ascent could be carried out in the comparative comfort of a compression chamber.

Unfortunately, when considering depths and pressures encountered down to say 1,500 feet one has to consider hull strength, size and weight, and it soon becomes obvious that it is not just a question of redesigning some out of date submarine. Then of course comes the all im-

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portant question. Who is going to pay? How can one justify the necessary expenditure in these days of strict, albeit sometimes false, economy?

This brings us to the point which I feel must be mentioned and that is the commercial attitude, and the 'I won't tell you unless you pay' attitude that has crept into much of recent research. I personally find it extremely distasteful, but I think that we must remember that all these trials and experimental programmes cost money and unless one is backed by a service or some large organisation the necessary cash has to be found somewhere.

To summarise, and, I must stress now, that these are my own views and not necessarily subscribed to by the Admiralty:—

All the research that is taking place into the varied aspects of diving physiology and techniques can lead to nothing but good and should be encouraged.

The task of cultivating the sea to help feed the world's hungry masses is very creditable but, visions of

divers for weeks underwater tending their flocks and ploughing their fields is not a picture to which I subscribe. On the other hand I think that there is much to be said for taking fish away from the inherent dangers of breeding in the sea and producing them under controlled conditions.

The application of Commandant Cousteau's idea of an underwater base I think can be used with advantage to Civil Engineering projects, but I personally would like to know more about the long term effects of subjection to pressure, plus the variations of pressure that are encountered, over very extensive periods.

I fully subscribe to properly controlled and careful research into deeper diving but I doubt very much whether the ability to dive to 1,000 feet or more will become a practical operational proposition within the foreseeable future. However, if as a result of all this research a new technique for extensive, safe and useful, diving to say 500feet can be devised a very worth while step will have been taken.



OBITUARY

Most people will by now have heard of the tragic death of the Chairman of the Submarine Research Centre, off Santa Catalina Island in the Pacific.

A striving toward greater unity in the development of improved and safer methods of diving was Peter Small's great ambition. It required someone of his depth and sincerity to appreciate fully the need for this in the diving world. The difficulties that have to be surmounted in achieving it are great indeed. But Peter never gave up; right to the end he was struggling to cure the malaise that has plagued the diving profession since it received a face-lift in the

39 - 45 war.

These were his motives in starting the British Sub-Aqua Club and the Undersea Equipment Research Society. He had hoped that by achieving an outstanding success in the 1,000 feet dive with Hannes Keller he could show how it is possible for people to get together and get on with something useful. With his additional skill of writing, he could have driven this point home, had he not died in the attempt. With the impetus of Peter's valiant efforts, we must look forward to the development of the Society in the purposes for which he started it.

J. BROOKS.

Into the Depths

HANNES KELLER'S story of his part in the 1,000 feet dive which led to the deaths of the British Divers, Peter Small and Christopher Whittaker.

'Not the method, but a chain of misfortunes'. By Hannes Keller.

I met Peter Small for the first time in the spring of this year, at a congress in Switzerland. He was very interested in my research programme in deep-sea diving, and for almost the whole of one day I told him about my ideas.

If a man could go, for instance, to 1,000 feet down and do practical work, then all the continental shelf zone could be explored — a total surface of more than 16 million square miles, which is more than twice the area of the whole of Europe

I have always had the opinion that a diver, just with his rubber suit, can reach that depth and do practical work. The naval authorities convinced me of the importance of developing such diving techniques very fast, because they could be useful one day for the salvage of sunken submarines.

Secret Mixture

I am associated with Dr. Buhlmann from Zurich University, with whom I have been doing deep-sea diving experiments in the open water as well as under laboratory conditions for the past three years. We had already reached in experiments the simulated depth of 1,000 feet, and so had proof that this depth can be reached.

In the open water in a Swiss lake I had done a dive of 728 feet, together with a Newspaperman, Kenneth McLeish, from *Life Magazine*, in this way proving that other people can use my diving methods too. Our method is based on the use of secret gas mixtures which the diver has to breathe.

I was now interested in doing a dive to 1,000 feet and staying five minutes on the bottom. The United States Navy and several big organisations supported this idea. It took me 16 months and about £20,000 to prepare this dive.

In the autumn, Peter Small came to Switzerland. My first move was to make a dive in the pressure chamber with him. For some minutes we were under a pressure equivalent to a depth of more than 400 feet, both breathing air.

I wanted to find out whether Peter would panic under these very tough conditions, as divers sometimes do. We were both suffering the so-called 'rapture of the depths', but Peter's behaviour was brilliant, and I was very satisfied and impressed.

I told him that there would be no difficulty in his doing a 1,000 feet dive, and even enduring difficult situations.

Some weeks later we again made an experiment, and now we simulated the pressure of the 1,000 feet dive. Peter was quite all right in the dive; only at the very end, at the pressure of 10 feet, did he suffer a slight case of 'Bends'. It was not at all an accident, but a sensation which professional divers very often have after doing long and deep dives.

We met again in mid-November at Catalina Island, California. Everything was ready for us to perform the first 1,000 feet dive ever done in the ocean.

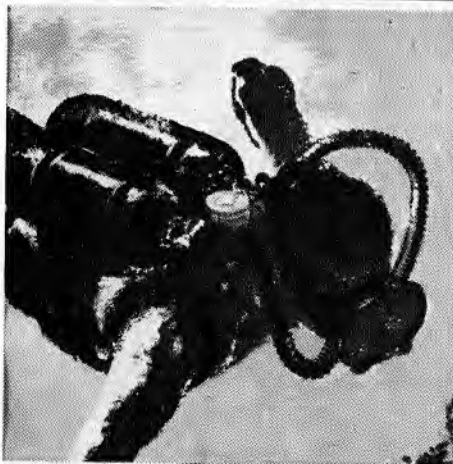
We were using a submersible decompression chamber as an elevator to the bottom of the sea and back to the surface. This chamber was designed by me, and was

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equipped with a lot of gas mixtures and apparatus. The total weight was about three and a half tons.

The first dive was shallow. We just went down about 20 feet. I showed Peter all the equipment and taught him what he would have to do in all situations. We went through all kinds of simulated emergencies.

Our next dive was already a sensation. Last Saturday we were diving at 300 feet and staying one hour at the bottom. Nobody had ever done that before.

Peter and I got out of the chamber and we were swimming around, but both controlled from the surface by submerged T.V. cameras. Everything worked perfectly.

Some time after the dive Peter felt some sensation in the skin which might have been a very very slight case of 'Bends'. I told Peter to go into the pressure chamber for some time and get rid of it, because we planned our great dive for Monday. In normal circumstances these slight sensations would not have been treated. After the treatment, which was very short, Peter was perfectly alright and on Monday morning we were ready.

We both entered the chamber with our equipment and gave orders that the bell be put into the water. We reached a depth of 15 feet and then stopped. At the surface everything was given a last check, and we also checked everything.

I realised that one of the gas tanks was leaking, and told Dr. Buhlmann that regardless of this I would swim away from the chamber at 1,000 feet, but stay close. On the other hand, our gas reserve was absolutely sufficient.

Then we began to go deeper. At 250 feet we took our mouth pieces and began to breath the mixture for extreme depths. We checked every-

thing for the last time, and Peter gave me the okay and we went to 1,000 feet.

After six minutes the bell landed on the bottom of the ocean at 1,020 feet. I gave the signal to the surface that we were okay, and Peter helped me to open the hatch of the bell.

Then for the last time I filled up my gas reserve on my back, and stepped down into the water. I had a American and Swiss flag which I wanted to drop, but they got entangled with my air hoses and I had some bad moments until I got rid of this difficulty. Finally I succeeded, dropped the flags on the ocean floor.

Emergency Drill

Immediately I entered the chamber again, and at that moment I started running out of gas and began to feel dizzy. I acted at that moment as for an emergency. Together with Peter I closed the hatch, and I opened the main valve.

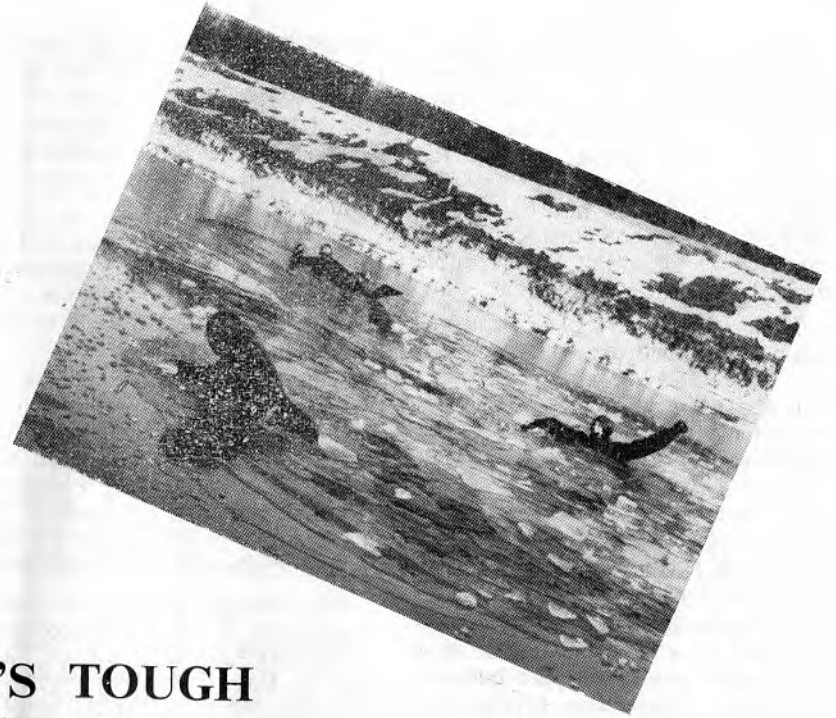
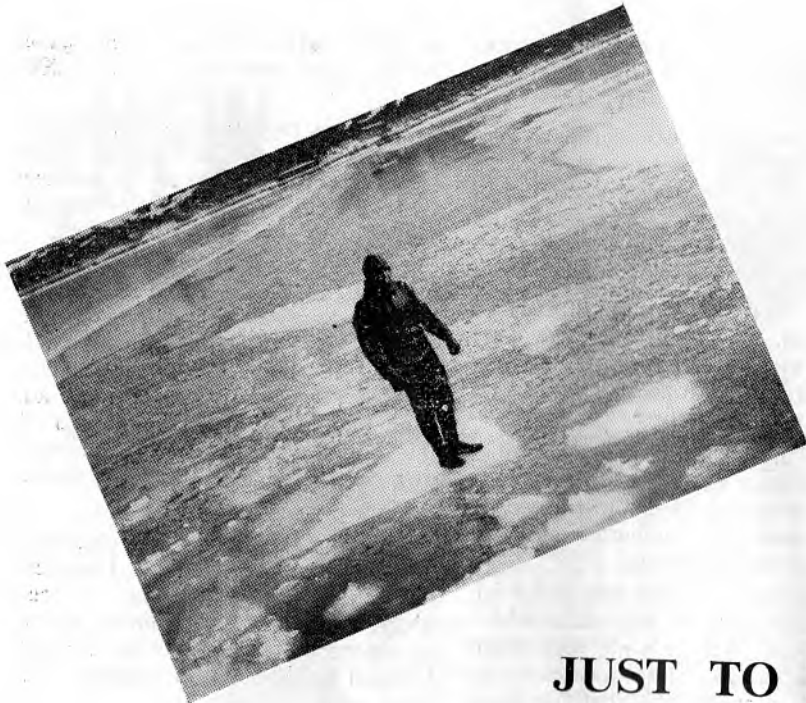
This was to blow all the water out of the chamber. I opened the window of my suit and perhaps that of Peter's too; maybe he opened it himself — I am not sure about that. This would save us from being killed by the gas running out. But we were both breathing the air in the chamber under this enormous pressure.

My crew, observing us with the T.V. camera, saw me fall down first, losing consciousness. About one and a half minutes later Peter fell down too. Naturally the chamber was already on the way back to the surface.

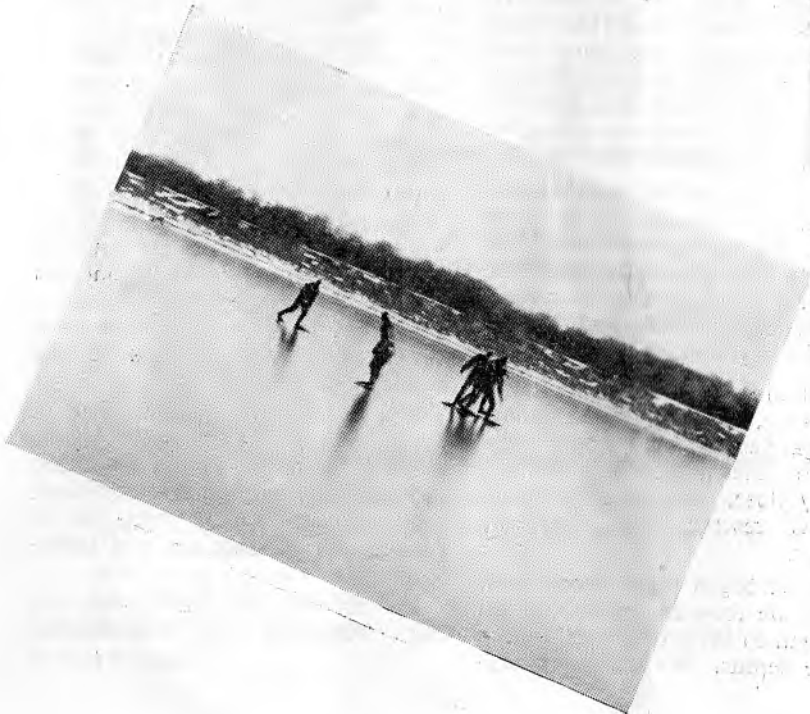
The chief of operations had a device to measure our pressure inside the bell. When we were at about 200 feet depth, he realised that our hatch was probably not entirely closed, because the pressure was not sufficient.

He ordered the standby divers, Dick Anderson and Christopher

Continued on page 26



**JUST TO PROVE IT'S TOUGH
AT HORSEA
JANUARY 1963**



Whittaker, to go down. Both of them were in perfect condition, and both of them were famous divers. They went down and came back to the surface, reporting that anyway the chamber was free of water and the hatch closed. Dick had closed our exhaust valve on the outside to make sure that we shouldn't have trouble if anything went wrong inside.

Then the chief of operations again determined the pressure inside the bell, and became convinced that something must be wrong with the hatch of the bell. He asked Dick Anderson, and Dick wanted to go again to have a look. Chris Whittaker was ordered out of the water, but insisted on going down with Dick because Peter Small was his closest friend.

Chris said he was feeling perfectly all right. They went down again, and Dick saw a piece of flipper between the door and the frame. He pushed it back with his knife, and now the door was closed perfectly.

Dick gave the sign to Chris to swim to the surface and report this fact. Chris swam away, but never came to the surface again.

In the meantime we had pressure enough in our bell so that it could be taken aboard the ship. Immediately the ship began to move to Long Beach, to reach the naval hospital. After a quarter of an hour onboard the vessel I woke up. I was dizzy at first but then recovered.

I saw Peter lying there, and cut his mask away and realised that he was breathing. I put him in a good position and gave him oxygen to breathe at intervals.

After about one and a half hours he woke up too, and was feeling all right. Nevertheless he was terribly exhausted, and I was myself, but he was breathing. He could speak, he gave clear answers, he was thirsty and sensitive to pain.

I checked his condition carefully. I asked him about aches, but he was feeling perfect though terribly weak. I gave him a drink. He was very nervous at the time, changing his position on the floor every 30 seconds.

After two hours we were at Long Beach, and the bell was put on the pier and Peter began to sleep. I let him do so, in the belief that sleep would be fine for him.

Just before the door of the bell could be opened his respiration got weak. Immediately I began artificial respiration, using the mouth-to-mouth method. I gave emergency signals as the hatch was opened. The ambulance was ready, and we took Peter to the hospital 300 yards away.

Gas Bubbles

Everything was tried, but Peter did not recover. The doctor first had the idea that Peter was killed by a cardiac arrest caused by extreme fatigue, as is known in mountain-climbing and athletics. Later gas bubbles were found in his tissues.

On the other hand I didn't suffer any de-compression accident myself, and we had done this kind of de-compression a lot of times. The presence of bubbles doesn't prove that he died of the 'Bends', because a body in agony anyway reduces blood circulation, and so does not get rid of the gases. Any dead body that has been under pressure will show these bubbles. We don't know for sure what happened to Peter.

— X —

It is my opinion that Peter did the dive with me because he believed it made sense to do it.

So I think it is my duty to honour Peter's memory by continuing the research. We will take all our material back to Switzerland. We will try to understand more about the whole thing, and then I will try

myself again. We are sure that it was not the method itself that failed, but that a chain of misfortunes, beginning with the moment when we had to open our masks, killed Peter.

I regret deeply this accident that took this brave diver and good friend of mine away. I feel somehow responsible, but on the other hand there is a natural hazard in this kind

of work and I honestly don't know how I could make this hazard disappear entirely in this very new science.

* * *

The management wishes to express their thanks to the *Daily Telegraph*, who gave permission for this article to be reproduced from their newspaper, 9th December, 1962.

Your Magazine

AS I have previously mentioned in my Editorial, here is the rough outline of what goes on when producing the Magazine and also some facts and figures concerning it.

Since taking over the job I have discovered quite a lot of interesting items. As many people have asked me what the job of Editor entails and how the Magazine is produced I thought I would take this opportunity of letting you know what happens in the 'back room'.

I will not go back into the history of the Magazine other than to tell you that is now in its Tenth year of publication and that each year we publish three editions. As time goes by I am pleased to say that our publication increases, so that now we have 1,500 copies printed of each edition. Our distribution, not including R.N. ships and establishments abroad, is world-wide, covering 26 countries. This, I feel sure you must agree, isn't bad for a small, private and unsupported editorial such as ours.

I am afraid I am not allowed to quote any financial facts and figures other than to tell you that after we have paid for everything and posted your Magazine to you (postage free) we are just about able to keep heads above water.

Now then, this is what happens to an article that gets sent to me. (When I get them)!

For example, Charlie Ogwash, of the B. and M.D., Bali-hi sends in an article on R.M.S. procedure on grass skirts. Firstly, this article will no doubt come in longhand so straight away I have the job of deciphering his hand writing. The next stage is to correct all spelling mistakes and punctuation, and to type out Charlie's article on the old 'zotting' machine. I then pass it on to a very good friend of ours on the 'Schoolie' staff who again goes over the article with a fine tooth-comb.

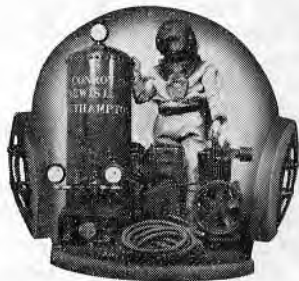
All being well, the article is then sent to our Printers, Coasby & Co. Ltd., of Southsea, who then make up the types and roll off a rough copy of the article on forms which they call 'Gallies'. (Please don't ask me why they call them this).

These 'Gallies' are then returned to me so that I can check them for any printing errors and to see how they will form into columns thus enabling me to see how many pages of the magazine will be taken up.

Once it is near time to print the magazine, the printers produce a rough copy of the completed magazine and return it to me so that it can have yet another check over for any errors. If all is satisfactory,

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the printing presses then go into motion and your magazine is produced.

By the way, all photographs that are sent in have a similar treatment. They are sent over to the Photographic Section to our 'swimming flashbulb', Mr. Roy Fordham, who goes to work on them to enlarge or cut down in size so that all the photographs in the magazine are of a standard size.

That's not the end of it yet — once we have the finished magazines we have distribute them. This job takes Lt. Lees and I nearly a week to complete keeping on the go all the time.

The unenviable task of keeping the books square and looking after the 'lolly' is left in the capable hands of Lt. Lees—rather he than I.

Now we have this edition out to you; straight after Easter leave, we commence all over again to start your next edition.

As I have said in my Editorial, we do need articles, so spare a thought and help out, and if you can type them so much the better as it would help us considerably.

Who said the DIVING MAGAZINE was a 'quiet number'?

Cheers all,
DICKIE.

By-Pass Cracks

Observation Chamber:
Transparent Sanitation.

Injector By-Pass:
Device for doting inoculations.

Constant Mass Reducer:
Latest slimming device for divers.

1st Stop with Safety:
One mile beyond the last pub.

Reversed Ears:
The result of listening to too much back chat.

Fins:
'Ain't what they used t'be'.

Nose Clips:
Pugilistic award for those who forget to duck!

Soda Lime:
'T.T.'s' cocktail.

Shot Rope:
Divers favourite pub.

Distance Line:
Course taken by intoxicated diver.

Suit Onflation:
Price of slops.

D.U.C.S.:
Water animals that go Quack!
Quack!

Zig-Zag Search:
Tot time.

Bottom Search:
Pleasantly familiar with opposite sex.

Shot:
BANG!

Lazy Shot:
Fizz!

Back Weight:
Call to nature.

Dome Change:
Morning after the night before.

Screw Change:
Oppo's girl-friend.

Succession of 3 Bells:
Am clear, but can foul myself if left alone.

Emergency Bottle:
Hic!

Relief Valve:
Operative after a few pints.

Counterlung:
Bag of wind (as in mother-in-law)

Two-way Cock:
Every divers dream.

Wire Rope:
Tin string.

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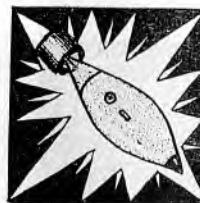


Underwater Equipment

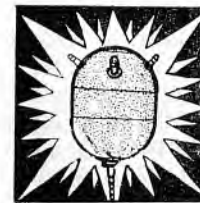
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Portsmouth Command Bomb and Mine Disposal Notes



AS from the 1st January, 1963 the Portsmouth Bomb and Mine Disposal Team also became responsible for Port Diving Duties, being assisted in these at night and at weekends by the staunch support of the Duty Diving Guard. Therefore, at the moment of writing the team consists of the following:

P.O. Flannagan, C.D.1
P.O. Davis, C.D.2
L.S. Futcher, C.D.2
L.S. Neville, C.D.★
L.S. Coote, C.D.★
A.B. Gardiner, C.D.2
A.B. Wade, C.D.2



Some of this team we only have with the tolerant and benign approval of the Instructional Diving Officer. The idea of the change was to leave the Experimental Clearance Diving Unit free to experiment, without the continual distraction of the never-ending, mundane, day-to-day diving tasks. However, thanks to his team having gone off in *Reclaim* to bathe

in the sunshine of Tenerife, we have been most ably assisted in recent weeks by the E.C.D.U. Officer, Lt. T. Bain-Smith. One of his recent exploits was on the night of 30th December, 1962 while leading the B. and M.D. team, consisting of P.O. Davis and L.S. Futcher, on a job. He rescued many cars, including an ambulance with a serious spinal case on board, from the large snow drifts which had built up over night at the start of the great freeze up. As Lt. Bain-Smith had just got engaged to be married the previous day, it would seem to prove the point that one mad daring deed leads to another.

Since the New Year we have been kept fairly busy with both diving and mine disposal jobs. During a recent trip to the East Coast three members of the team had to sleep in an unheated Nissen hut. For the benefit of the fashion experts slumber attire consisted of: 1 Diving Frock, 1 pair of John L's, 1 pair of Sea Boot Stockings, plus 'X' Blankets ('X' being any number). When hands were called in the morning it looked like three mountains starting a volcanic eruption. More recently we have found right on our own doorstep, namely the Isle of Wight, six in number B type C scaffold mines, these obviously having become exposed due to the removal of sand by by easterly gales, snow and frost. Another interesting job was the rendering safe of an 1863 cannon ball which was dredged up in Nigeria by the dredger *A.A. Raymond* and brought into Newhaven, Sussex. The

gunpowder content was still dry and in a fairly good condition since it burned quite easily. (B.R. 942, the Handbook of Ammunition does not unfortunately give details for the disposal of cannon Balls).

Apart from the cannon balls I think I have written enough b s (balderdash), so had better sign off, with best wishes to Jock Campbell in his retirement.

Yours aye,
MAC.



Helicrash Diving Team

THE intrepid band of heroes, to be known as the Helicrash Diving Team, the Aircrash Deep Diving Team, the U.K. Deep Diving Team, or by a variety of less complimentary names, was formed in February of last year in H.M.S. *Vernon*. The object was to work up a team of Clearance Divers able to dive to 250 feet using S.D.D.E.

The work up commenced with oxygen tolerance and nitrogen narcosis tests at the R.N.P.L., pot dips to 300 feet, and a period at Messrs. Siebe Gorman's Ltd., using S.D.D.E. in the 'wet' pot. Throughout the summer dives in S.D.D.E. were carried out in the Solent and at Portland, with four trips to Falmouth to get the deeper depths. The



Falmouth dives commenced at 180 feet and progressed in 10 foot stages to 250 feet, with the time on the bottom being increased also.

The Falmouth periods were most pleasant, as most of you who know Falmouth will realise. A team car was hired for each trip and social activities spread over a wide area. By the end of the third period the record for the yard of ale at the 'Halfway House' had been reduced from 2 minutes 35 seconds to 40 seconds, with Jock Adam as the eventual champion. As free beer was provided for each attempt trying for the record was a popular pastime. Ken Beck even broke it one night using milk (3¼ pints)!

The usual problems with drill and equipment were ironed out and by the end of the July the team was considered worked up. It was made operational and consisted of:

Lt. K. G. Lees
A./P.O. R. H. Andrews
L.S. K. M. McKenzie

L.S. K. Beck
L.S. P. L. Power
L.S. R. M. K. Adam
L.S. R. Jackson

Having engaged the services of a good publicity agent (Buzz, Grapevine & Co.) our services were soon in demand. A quick trip by R.A.F. aircraft to Scotland brought the first job, crawling around the muddy bottom of Loch Long. With zero visibility, extremely variable weather and the gay social life a long way away this was not a pleasant task. However, a couple of out of the way pubs were found, which relieved the tension and some heavy thirsts.

Going from one extreme to the other the next job was in Malta taking part in submarine escape trials down to 250 feet. These were reported in the last issue of the Magazine. The sun shone, the sea was blue, the visibility was perfect; the only snag was that we were expected to do some work. This

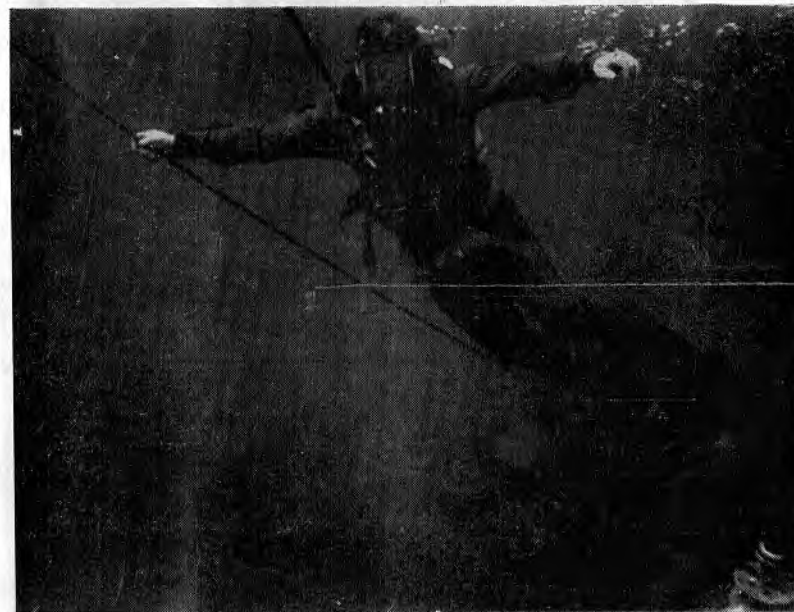
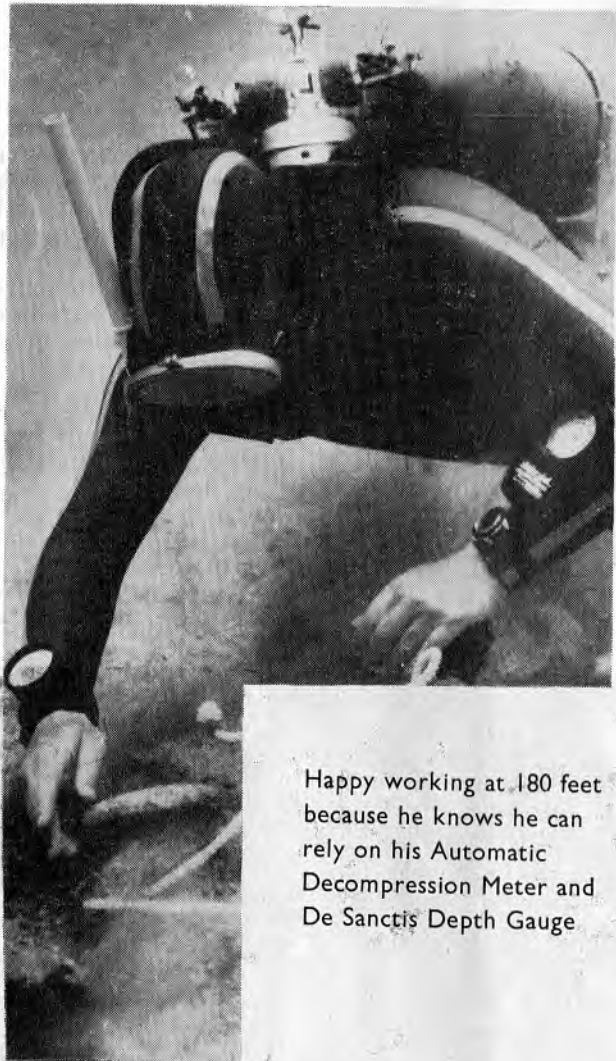


Photo: T. Glover



Happy working at 180 feet
because he knows he can
rely on his Automatic
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De Sanctis Depth Gauge

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entailed sitting outside the casing while the escapers emerged, acting as safety numbers. Luckily no untoward incidents occurred and the trials proceeded as planned. Bolstered by weekend fishing trips and many visits to local hostelrys three weeks passed pleasantly.

Operations were resumed in Loch Long, but hardly had we started when a helicopter ditched off St. Davids Head, Pembrokeshire. The team was embarked in H.M.S. *Miner III* at the time and was sailed south. The search carried on for three weeks with the assistance of *Shoulton*, and later *Squirrel* and *Chailey*. Unfortunately the search

was unsuccessful, due to bad weather and the exposed position.

The return to Loch Long (amid general acclaim)! produced a period of diving all day in rain, hail, snow and gale force winds. Fortunately Christmas leave arrived to save us and *Miner III* sailed for Portsmouth.

Sub.-Lt. A. A. 'Snowy' Davis has now taken over the onerous task of looking after the team. Deep pot dips and trials on minesweeper propellor changes have kept them busy. A move to Guzz is now imminent, this being their future base and much nearer to deep water to keep in practice. K.G.L.

'If'—You want to be a Diver

by 'B.F.', (with apologies)

IF you are fit to dive when those
around you
Are pleading colds and pinning
faith on you;
If you can clear your ears without a
nose clip.
Mask flooded, and eustachians full of
'flu,
If you can swim when all your limbs
are aching
And not give up when reason says
you must,
Or being nauseated, not give way
retching
Even though convulsing fit to bust;
If you can control your lips from
twitching
When diving deep and gas is neat O₂,
And refrain from symptoms as of
drinking,
When narcosis makes its evil pass at
you;
If you can slip your weights with gas
exhausted,
Hold fast your breath and suit inflate
in time;
Not caring that your counterlung is
flooded,
And your mouth is full of caustic
soda lime;

If you can hack your way through 6"
Manilla
Wrapped bar taut around a monster
screw,
Only to find that docking is necessary
And was in any case six months
overdue;
If you can wield a hammer, hacksaw,
chisel,
With the same skill and ease the
masters do,
If you can weld, burn or use a bolt
gun,
To float a ship and salve her cargo
too;
If you can keep your head in inky
blackness
Free swimming 'neath some monster
vessel's hull,
And return unaided to the daylight
With nerves in tact nor dented in the
skull;
If you can fill each underwater minute
With sixty seconds worth of diving
done,
Yours is the sea and anything that's
in it,
And — what is more — you'll be a
DIVER, son.

Special Order of the Day

by THE COMMANDER-IN-CHIEF, FAR EAST STATION

FLEET CLEARANCE DIVING TEAM

DURING the salvage of the Japanese submarine I-34, sunk during the Second World War off Penang, the salvage company concerned requested the services of the Fleet Clearance Diving Team. Eight unexploded torpedoes had been found in the sunken vessel, and, because of the danger to which neighbouring kampongs were exposed, the team was required to render safe and supervise the disposal of the torpedoes.

A previous attempt by the salvage company to extract the torpedoes had resulted in an explosion and they to be regarded as being in an unstable state, some of them having been armed by the action of the water on their pistols.

A Bomb and Mine Disposal unit, led by Lt. J. L. A. Majendie, Royal Navy, and consisted of:

Christmas, P., JX 820157, C.P.O.

Dolan, F., J 969436, A.B.

Fowles, P. J., J 938363, A.B.

was sent to Penang to dispose of the torpedoes.

The task of removing the torpedoes from the submarine and rendering them safe was successfully carried out by Lt. Majendie and his team after arduous work in unpleasant conditions, involving a considerable degree of risk.

I am pleased to commend Lt. Majendie and his team for bringing this hazardous operation to a successful conclusion.

J. D. LUCE, *Admiral.*

No. 4 Special Boat Section R.M.V.R. PORTSMOUTH DETACHMENT

'S'like parachuting in reverse' was the verdict after our recent visit to the Tower at H.M.S. *Dolphin* for submarine escape training. How we envied those instructors swimming around in that warm water every day, gliding up and down like underwater statues whistling their eternal call to Sea Nymphs which they swear lurk at 4 A.T.S. A.B. level (shades of Nitrogen Narcosis or just rum tum)? Our envy was short lived however when we were taken in hand by Lt.-Cdr. Hamlyn, C.P.O. Cadogen and P.O's Stoopman, James and Stokes, all of the Mediterranean deep escape trials fame, and the other instructors.

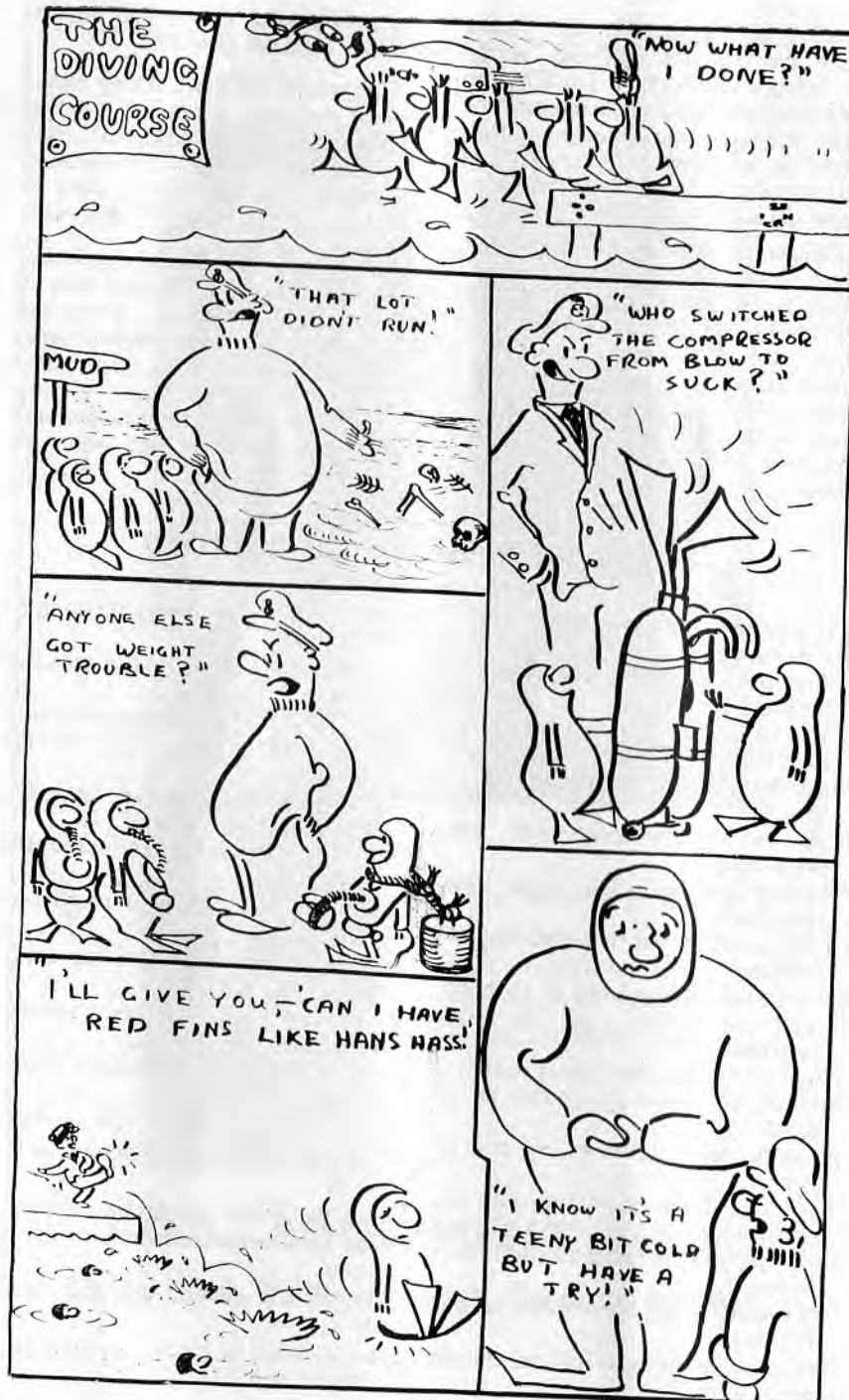
The glass-like surface of the tank was soon being shattered by goggle-

eyed bootnecks erupting like miniature Polaris missiles.

Marine Colebourne of course, had to do his usual comedy turn. This time he came out of the 60 feet air-lock with his relief-valve closed. Much to our disappointment the instructors held him firmly and several minutes later when they saw his bloated face they pushed him back into the lock for another whiff of air before letting him do his ascent.

In the afternoon we were given a very instructive — and amusing — lecture by C.P.O. Wand, who besides being an escape instructor is also an Artificer Diver and an ex-charioteer.

All this was quite a contrast to Horsea Lake, two weeks earlier,



when we ploughed our way through the January snow drifts for a diving session in those placid, frigid waters. Cpl. Moody didn't have to throw his newly aquired weight around, we did it for him by tossing him in the 'oggin' first, to break the ice (literally) Marine Lock added insult to injury by shouting 'We're all the same rank in a flippin frog-suit', and then sat back to contemplate his expected weekend fatigues. With all the wisdom of Solomon, Sgt. 'Mack' (our new P.S.I.) silently stood back and watched our antics. God knows what he was thinking. (These are Marines)? Other training sessions have been held in various pubs throughout 'Pompey' and the South over the last few months. Two more bouts of D.T's and we are all fully qualified.

Every Tuesday evening (7 to 9 p.m.) will find us at the R.M.F.V.R. Centre, R.M. Barracks, Eastney,

learning the difference between a bar (sand) and a bar (sawdust) — navigation you know, — anyone interested in a cackle and wet would be very welcome, we have our own bar, just ask for yours truly and I'll introduce you to the manager, it's all very informal, besides which you may learn something to your disadvantage.

Latest News Flash!

The 'Govner' — Lt. Heaton, has just been promoted to Captain and my honourable self has been put on the N.C.O's promotion list. God; how degraded can one get.

Marine Colebourne is at present doing a U.W. burning course at *Vernon* for his civvy trade of Dockyard Diver, he says he has met a lot of R.N. diving types but so far we have received no complaints.

See you on the shot rope,

MARINE (WETRUN) HAWKINS.

Christmas Day in the 'U.L.U.'

DESPITE many entreaties, threats and even downright blackmail, I have until now dodged the issue as far as writing to the DIVING MAGAZINE is concerned. The last pathetic entreaty has however caught me on the raw, and so despite the usual sausage fingers and divers amnesia, here goes.

This is, I believe, the first article from 'Woo Ha' (H.M.S. *Woodbridge Haven*) the Minesweeping support ship for the Coastal Minesweepers on the Far East Station.

When the Borneo lark started we were sent off with all despatch to Labuan with 'K' Company of 42 Commando. I was subsequently to see much of these grand types as I was sent to a place called Bongar, which is up the Temburong River.

The job was to run any service that could be carried out by long boat up the various rivers of the Temburong District for our friends 42 Commando. This entailed everything from food supplies and troop movements to laying ambushes over the curfew period.

Each day produced its own succession of crisis, and Christmas Day will give you an idea of a typical day in the 'Ulu'.

On Christmas Eve the R.A.F. had very kindly carried out a drop, by flares, of all the traditional Christmas fare. This was sorted out and all was ready by the next morning to supply the various locations by long boat. This was a pretty fast and tricky business as the long boats were fitted with outboard engines and whisked up the rivers which were generally plagued with massive tree trunks floating down from the evening rains.

I was doing the milk-run to Biang on this particular morning and Biang is just as far up the Temburong River

that one could go, unless one changed to an Iban long boat which was capable of pushing up through a quarter of a mile of rapids.

Upon arrival at Biang we went ashore to find that all was prepared for the troops to enjoy the traditional festivities. They were living in the local atap schoolhouse, which was to be their banqueting hall. Desks had been aligned to form a long table and blackboards used to provide pictures of Santa Claus. Cutlery and glasses were neatly arranged along the table and even table napkins were provided, although they were marked 'H.M. Government Only'.

After a Christmas drink we embarked with the latest load of prisoners who we huddled into the bows. A rather fierce, bearded, partly clad A.B. ensured that peace reigned on the return journey through the swamps as he had one up the spout and was itching to use it. How nice we thought to go back to a succulent bird instead of the usual compo.

This was not to be however, as upon return I was instructed to proceed in a long boat to a place called Batu Apoi where I was to commandeer three long boats and then lay an ambush along the river.

Hastily grabbing a drumstick in one hand and my faithful, but rusty, pistol in the other I set off with a gallant major into the 'Ulu'.

The troops who were to spend Christmas night in ambush in the long boats were taken there by chopper so they did at least have a bite at a bird, albeit a rather raw one.

Long boats were 'borrowed', troops placed, but another small problem had presented itself: by this time it was quite dark and the Major and I were in an unfriendly river, with

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no lights, during a curfew — when 'shoot on sight' was the order of the day.

The eight miles journey back along the winding inlet rivers I leave to your imagination, and we had the final problem of the sentries stationed at the river stop at Banger. This was overcome by stopping the boats out of range, lighting cigarettes and then

slowly drifting along, meanwhile talking at the top of our voices. A rather sheepish carol followed, but what would you do chum?

A long whisky followed in the comparative security of the mess and it was unanimously decided that this was by far the most interesting Christmas yet.

J. REA.

Haggis Bashing

NO doubt all students will realise that to even approach this subject you must be well versed in the habits of Haggis Basher.

In pre-historic times these people were great hairy brutes carrying clubs and approached the Haggis with no finesse at all, today though, the hunters are suave, scheming species of Homo Sapiens with a gift of the gab.

Finding a Haggis Basher can consume more time and money than the average student is prepared to spend so very few qualify for the title.

Masters of the art are never found in Scotland, they fearing that the Haggis will die out if they stay after qualifying, move away to other places they may expound the art. Now the divers places that they may be found in are too numerous to relate here but one or two may help the student on his way.

Early in the mornings they may be found in various beds with an assortment of companions, this is no time to approach as the student is himself in danger of being bashed! Much later in the day they may be found in various offices and cubby-holes, not their own, drinking coffee and telling about the ones that got away, again this is no time to make the approach. In fact the best time to make the approach is much later in the day, and preferably on a blank week, in the dubious haunts known

only to the select few and of course the police.

The Haggis Basher may be found propping up a bar, or female, or talking the hind leg off a donkey, though one kind just sit and stare at a pint of the best.

Now the approach must be very, very subtle and in the following fashion. Make certain that the Haggis Basher is nearly at the end of his drink and on his own, then order yourself a pint and ask him what he wants to drink, you have then made the first amiable contact. To maintain this contact and amiability you will be required to order more beer, but in due course the Haggis Basher will no doubt introduce you to the drink of all Haggis Bashers, this must be kept to a maximum whilst the Haggis Basher is holding forth on the subject of Haggis Bashing.

When all avenues open to this Haggis Basher have been exhausted he will put you in touch with another Haggis Basher who will follow the same routine; the student will then be passed from Haggis Basher to Haggis Basher learning more of the subject as the years pass until at last he is deemed fit by one of the Haggis Bashers to be an assistant; he will then be able to go out hunting haggis under supervision, after which only time will tell before he can call himself a Haggis Basher.

MAC HARRY.

Promotions and Advancements



To C.D. Star —

New Members of the Branch:

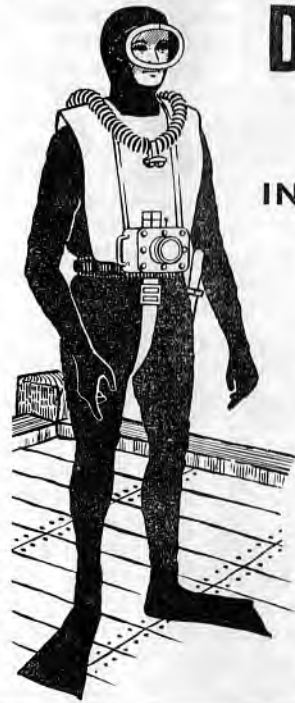
- P.O. G. W. Haines
- P.O. R. N. Neave
- A./P.O. W. B. Norton.
- L.S. C. Clyde
- L.S. N. Slingsby
- A.B. R. C. North
- A.B. E. J. Setchell
- A.B. W. M. McEvoy
- A.B. J. Dalby
- A.B. F. A. Broadhurst
- A.B. M. Rowell
- A.B. M. J. Willson

To Artificer Diver:

- Shpt. M. J. Bell

To Acting Petty Officer:

- S. Carter, C.D.1
- A. Brooker, C.D.1
- T. H. Kissack, C.D.1
- E. A. Ayre, C.D.1
- R. M. K. Adam, C.D.2
- K. Beck, C.D.2
- C. R. Burrows, C.D.2
- A. Wilkes, C.D.2
- N. J. Edwards, C.D.Star
- V. Gibbons, C.D.Star
- A. Lumbis, C.D.Star



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Diving in the Ninth Minesweeping Squadron

THE Squadron (*Appleton, Kemer-ton, Flockton and Chilcompton*) left U.K. in July for the Middle East complete, much to everyone's amazement with six S.A.B.A. sets, two portable compressors and a Squadron Diving Team of seven. A few more qualified during our work-up at Malta and now each ship has three quarters of a full team.

Diving in Malta was limited to one Awkward and a five hour job getting a C.T.A. sweep wire off the port propellor shaft of *Appleton*. The wire had jammed in the 'A' Bracket of the Shaft and was got off by attaching a line to the sweep wire and heaving in on the minesweeping winch.

The ships arrived at Aden in September where we are generally based.

We had another Operation Awkward during Midlink V in Karachi, which ended by the attacking Pakistani Divers being hauled out of the water by the defenders, in various stages of exhaustion, after two hours of swimming against a strong tide. No mines were laid.

On our return to Aden we found that a Port Trust Tug, the *Sir Tom*, had been girded by a carrier leaving harbour. Divers from *Messina*, after days of non stop hard work had attached two camels and dragged the tug out from the main channel. *Messina's* divers had to rejoin their ship so a team from us (S.-Lt. R. F. M. Jackson, Midshipman A. D. E. Pender-Cudlip, M.(E)1 Fairbarns, A.B. Sidley), led by Lt. J. Ayrton from *Messina* took over.

When we arrived on the scene the tug was in 25 - 30 feet of water but fortunately she was on an almost even keel. To assist in the process of raising her there was one Mooring Barge (lifting power 60 tons) at the

stern and a floating crane (maximum lifting power 30 tons), at the bow, and two Cammels. These it was decided were more hindrance than help so they were removed.

Our first task was to remove the hatches from two W./T. compartments, one forward and one aft, so that they could be fitted with an air connection and a water outlet stand pipe. No trouble was met when taking them off, but we had trouble replacing them due to buckling caused when welding the connections on to them. The H.P. air connections were then fitted and the compartments were blown. But we found that they did not give us enough extra lift, so a similar process was started on the Fresh Water and Diesel Fuel Tanks. During this operation a large quantity of Diesel oil was deposited into the water as well as Sidley's eyes.

Finally after dragging the tug towards shallow water, we got the pumps into her and she was finally floated at 1330 on Saturday 15th December, with much rejoicing by the Aden Port Trust.

We then started our tour up the Persian Gulf and with it started our lighter side of diving. Using our new S.A.B.A.'s with the new type reducer we managed to fit in between sweeping, one or two fishing trips, with Lt. MacKay (about to start a C.D.'s course) being the most successful with a large Gow fish. While up the Gulf we had an Awkward cancelled because of the presence of sharks. After using the S.A.B.A.'s, even though shortage of spares limits our number of sets, U.B.A. seems a rather uncomfortable set.

Diving in these waters is pleasant and interesting. The visibility is generally excellent, the bottom interesting, the water warm and plenty of

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fish to look at. The only dangerous fish we have come across at close quarters are jelly fish the size of dustbin lids, two baby sharks and hundreds of sea snakes. We are the only ships on the Middle East

Station with S.A.B.A's and have great difficulty in replacing broken parts, but none of us would exchange them for U.B.A.

Life is certainly more pleasant than Vernon Creek during winter. S.S.

Royal Naval and Royal Marine Children's Home

THE R.N. and R.M. Children's Home, South Africa Lodge, Stakes Hill Road, Waterlooville can accommodate about 30 children, ranging in age from 2 to 15 years. They can take temporary cases, although the original function was to care for the children who had lost one or both parents.

All the children live at South Africa Lodge, a completely modern building, built as a Home. The children attend schools in Waterlooville and, if able to pass to Grammar Schools, remain until 18 years of age, and are found jobs suitable to their

ability and taste. Those who have no family, spend holidays at the Home, and continue to keep in touch.

The admission of a child of serving or ex-serving personnel below Officer rank in the R.N., R.M., W.R.N.S. or Auxiliary Services is governed solely by the need of the child. A parent is assessed for a maintenance payment on his circumstances.

Any enquiries with regard to the admission of children should be forwarded through the normal welfare channels.

"ODE TO EXTRA RATIONS"

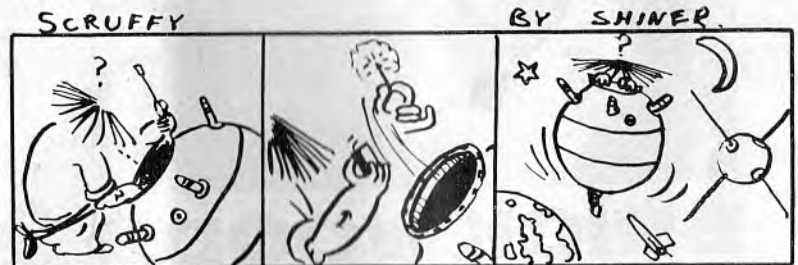
(With most humble apologies to Scotland's National Board).

"Ye pussers wha mah the divers
your care
And serve them oot their extra
fare,
We Scotmen want nae steaks sae
rare
Or meals in baggies,
But if you wish our grateful
prayer
Gie us some haggis."

Signal from Captain of a ship to the Diving Section, 'I am making more water than usual', Reply from Diving Section 'Do you want a doctor or a Diver?'

* * *

The most serious impediment to marriage these days is the difficulty of supporting both a wife and the Government on the same income.



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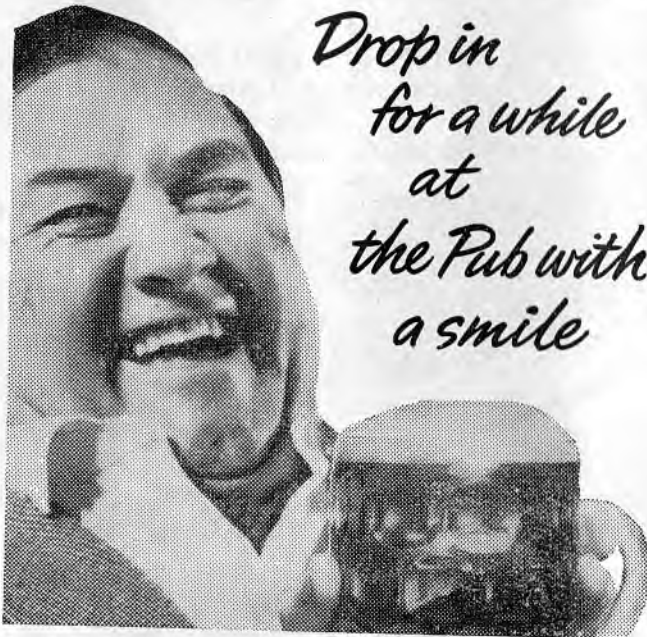
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The Association Ties are again available at 12/6 P. & P. 6d. extra. They are available in Blue or Maroon Terelyne and have an alternate motif of an underwater swimmer and a diving helmet embroidered in yellow silk. They are for sale to all serving and Ex-R.N. and R.M. divers including the Commonwealth Navies.

* * *

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* * *

We regret to announce that all back issues up to the Christmas 1961 Edition have been sold and we can no longer take such orders.



The diver is wearing an Underwater Swimmer's Dress made from rubber-proofed crimped knitted nylon, and is using SABA (Swimmer's Air Breathing Apparatus).

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