

**Safety
in
Comfort**

The Essgee 'Mistral' Aqualung by Siebe, Gorman based on the famous Cousteau-Cagnan design has all the latest refinements that research has suggested and experiment realised.

DEMAND VALVE The double-lever action reduces opening resistance to a minimum, and the single stage reduction gives maximum air-flow.

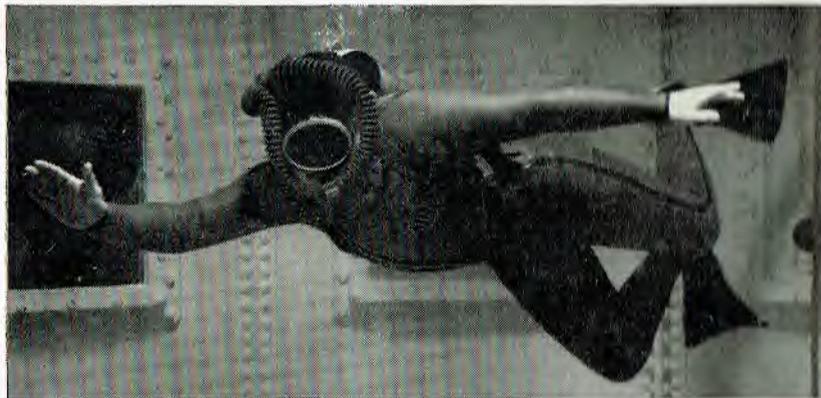
The design is simple and strong, the clamping mechanism has been improved, and the valve is made of non-corrosive chrome-plated brass.

AIR RESERVE VALVE The sets are fitted with an air reserve valve. It cannot be left accidentally on 'Reserve' when the cylinder is empty. The valve has no cam action which can wear or jam.

HARNES The new nylon webbing harness is designed without a waist-strap, to make a weight belt more comfortable to wear. The central quick-release attachment helps you take off the set before leaving the water, or jettison it in emergency.

TWIN CYLINDER CONVERSION You can convert your 'Mistral' Aqualung into a twin set.

* Write to us for full details of the Essgee 'Mistral'.



The Siebe, Gorman 'Mistral' - The World's most reliable Aqualung

SIEBE, GORMAN & CO. LTD.
Neptune Works, Davis Road,
Chessington, Surrey.
Telephone: Elmbridge 5900
Manchester Office: 274, Deansgate.
Telephone: Deansgate 6000

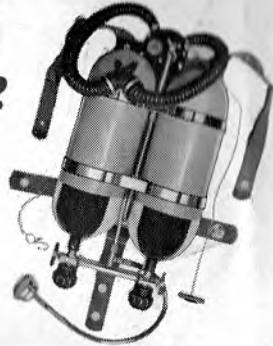
**SIEBE
GORMAN**

COASBY & CO LTD, SOUTHSEA.





**diving into
civvy
street?**



Whether you go on diving for fun or take it up professionally, make sure you get the best equipment. Heinke's have been making diving gear for 140 years; they are the only people in the world who manufacture a complete range of equipment in their own factory.

It doesn't cost much to start right. Heinke kits enable you to begin with basic necessities and add more advanced facilities when you need them. And everything, from the simple snorkel tube to the de luxe twin aqualung, is Heinke — a **great** name in diving. Write to us for our latest catalogue.



HEINKE DELTA SUITS

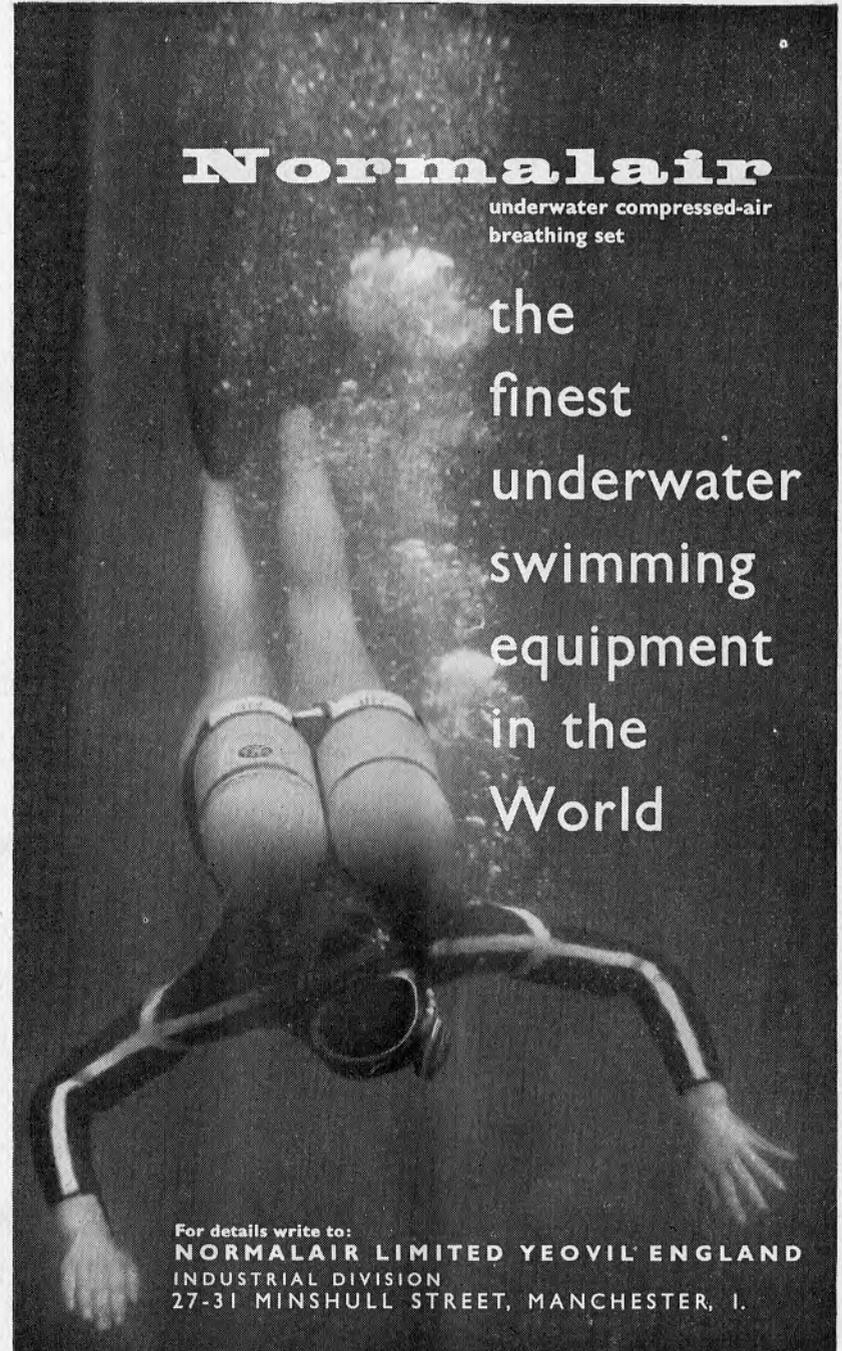
Heinke Delta Suits are designed to give complete protection to divers in cold or polluted water. Manufactured in neoprene, they are impervious to oil, sunlight or ozone, and will stand up to the rugged conditions encountered by professional divers

HEINKE LUNGS

Heinke-Lungs are used by leading divers in all parts of the world. Heinke venturi-jet two-stage demand valves are made to exceptionally high standards of accuracy; and their advanced design ensures minimum cracking resistance, maximum cylinder duration, constant breathing characteristics and adequate air supply throughout the pressure range

HEINKE

**C. E. HEINKE
& COMPANY LTD**
87 ORANGE ROAD, LONDON, S.E.1
TEL. BERMONDSEY 4461/4



Normalair

underwater compressed-air
breathing set

the
finest
underwater
swimming
equipment
in the
World

For details write to:
NORMALAIR LIMITED YEOVIL ENGLAND
INDUSTRIAL DIVISION
27-31 MINSHULL STREET, MANCHESTER, 1.

Contents

	<i>page</i>
EDITORIAL	3
BUDDY LINE PHONE	3
SPECIAL ORDER OF THE DAY	5
A SUPERSONIC REGULATOR FOR DIVERS' BREATHING EQUIPMENT	7
NEWS FROM H.M.S. 'NARVIK'	13
THE GUARDIAN OF HORSEA ISLAND	14
NEWS FROM 'RECLAIM'	17
SEQUEL TO 'WHISKY GALORE'	20
C.-IN-C'S COMMENDATION	22
SALVAGE OPERATION—'ANNE GASTON'	24
'DEEPWATER' DIVISION SPORTS NOTES	33
E.C.D.U. NOTES	35
A VISIT TO THE SOUTH OF FRANCE BY YEOVILTON SUB-AQUA CLUB	38
'SCHNORKELLED'	39
'KEEPING THE FLAG FLYING'	41
ROYAL ENGINEERS DIVING SCHOOL, MARCHWOOD	44
COMMAND NAVAL BOMB AND MINE DISPOSAL UNIT	47
DIVING TRIALS AT GLEN FRUIN	48
H.M.S. 'PROTECTOR'	50
SWIMMING GALA—H.M.S. 'VERNON' 1961	52
FILM MAKING	54
RULE OF THE ROAD	54

R.N. Diving Magazine

EDITORIAL STAFF

Chief Petty Officer R. L. BENFIELD, *Editor*.

Lieutenant H. E. CAISLEY, *Treasurer*.

Instructor Lieutenant J. P. JEFFERSON, B.Sc., R.N., *Secretary*.

L/Sea. M. J. BRASSINGTON, *Cartoonist*.

Vol 8

June 1961

No. 2

Editorial

WE must apologise that some articles which appear in our magazine are hopelessly out of date as far as our authors are concerned.

The reason for this is four-fold:—

- (a) Delay in awaiting security clearance for some articles.
- (b) Articles intended for previous issue arriving too late and having to await next issue.
- (c) Articles arriving in good time having to wait until we have enough material for publication.
- (d) The necessity to tailor the magazine to a well balanced issue which necessitates postponing some material even though it does not fall within the first three categories. (Our most enthusiastic author has cheerfully accepted a stand over of three issues for a very attractive contribution).



Please remember that for 90% of our readers it is new, never get frustrated because it takes a little to produce, and above all let us have material for the next issue as soon as possible because the material cupboard is virtually bare after this publication.

Buddy Line Phone

by 'B.F.'

FOLLOWING on the Diver's Underwater Communication System (see DIVING MAGAZINE, No. 3, Vol. 7) and using many of its components, Admiralty Experimental Diving Unit is pleased to announce the birth of the 'Buddy Line Phone'. It is generally agreed that if we must have a buddy line for safety reasons, why not make this additional piece of

equipment useful, and enable the two swimmers to speak to one another rather than rely on what might be taken for rude gestures. Messrs. Payne and Noad were given this problem, to which they speedily produced an answer. We don't claim that this concept is original but merely hope that it will make for greater diving efficiency. Further, it is to be hoped that Diving Instructors will not take on the advice given to Flying Instructors, which is to inflict a 'constant patter' on the unfortunate pupil. Those who have suffered know too well what painful interpretation can be given to this advice.

NOTE.—It is confidently anticipated that the amplifier unit can be made much smaller.

The equipment is worn in much the same way as the buddy line system except that the controlling diver carries the amplifier on his suit inflation belt because at the moment it is somewhat too heavy to be held on the arm. The bone conductor transceivers are tucked under the hood or mask as for the D.U.C.S. rig. Those divers who normally talk out of the back of their heads will be delighted to know that the transceivers work very well from that



The equipment consists of the following components which are illustrated in the photograph.

- (a) Amplifier case complete with batteries, on/off and press to speak switches with waist belt.
- (b) Bone conductor units, one for each diver.
- (c) Courlene Buddy Line with spring clip for quick release.
- (d) Buddy Line arm band.

location also. At the moment quick release is only provided on one diver as this is thought to be adequate.

The controlling diver, i.e., the one with the amplifier, can hear his 'buddy' at all times but must make a 'press to talk' switch to speak to him. The other diver can receive or transmit without recourse to switching.

At the moment one set of this equipment is under trial and is

proving extremely useful to Experimental Clearance Diving Unit divers. It will inevitably be some time before the Buddy Line Phone gets into service generally, but with most of the components being common Diver's

Underwater Communication System, there is some hope that it won't be too long.

Any requests for a 'party' line should be referred to the Post Master General.

Special Order of the Day

Commander-in-Chief's Commendation

Surgeon Lieutenant J. M. D. Gallwey, M.B., Ch.B., Royal Navy, Royal Naval Barracks, Portsmouth.

Surgeon Lieutenant A. E. Wightman, M.B., Ch.B., Royal Navy, H.M.S. 'Londonderry'

Hills, D. R., P/JX 292856, Petty Officer (C.D.1), H.M.S. 'Vernon'.

Tyzack, D. W., P/JX 898422, Leading Seaman (C.D.2), H.M.S. 'Vernon'.

On Friday 3rd March 1961, the lifeline of a diver, who was engaged in a diving operation on H.M.S. *Londonderry*, berthed at South Wall Tidal Basin at Portsmouth, became fouled and his mask was displaced. Petty Officer Hills of H.M.S. *Vernon*, who was supervising the divers carrying out this operation, was largely responsible for the emergency action taken to bring the diver promptly to the surface. The diver was unconscious when brought inboard and Petty Officer Hills, acting on his own initiative, immediately began applying nose-to-mouth respiration, which he sustained until exhausted when leading Seaman Tyzack of H.M.S. *Vernon*, who had been tending another diver, took over from him and continued nose-to-mouth respiration until medical assistance arrived.

Wightman of H.M.S. *Londonderry* arrived at the scene, resuscitation by Holger Neillson artificial respiration was attempted. No radial pulse could be found, and after an incision was made on the diver's shoulder, which failed to bleed, Surgeon Lieutenant Wightman opened the patient's chest. Finding the heart motionless, Surgeon Lieutenant Gallwey commenced bimanual massage of the heart. Surgeon Lieutenant Wightman removed a portion of the 5th rib to facilitate massage and while cardiac massage continued, Surgeon Lieutenant Wightman maintained oxygen supply from the Novox apparatus. After about 15 minutes of cardiac massage, during which time no heart contractions were observed, attempts to resuscitate the patient were abandoned.

I have commended Petty Officer Hills and Leading Seaman Tyzack for their initiative and courage in promptly volunteering to undertake this unpleasant task and Surgeon Lieutenants Gallwey and Wightman for their prompt and decisive actions in boldly attempting to resuscitate the patient. It is tragic that their efforts should have gone unrewarded.

L. L. POWERS,

18th May 1961. *Admiral*

Commander-in-Chief.

When Surgeon Lieutenant Gallwey of the Royal Naval Barracks, Portsmouth and Surgeon Lieutenant

Quality Counts —at Bernards

With Civilian clothes as well as with uniforms the high quality of Bernard Tailoring is beyond dispute.

For Bernards choose only cloths certain to give satisfaction while the standard of tailoring and meticulous attention to every detail in cutting and fitting ensures Perfection in Craftsmanship.

There is a comprehensive range of Men's Wear at all Bernard Branches whereby most customers may immediately obtain a perfect fit, but where orders for Tailored to Measure clothes are required Bernards provide a splendid selection of patterns and a prompt delivery of orders.

A credit account settled through Admiralty, Banker's Order or the Post Office Savings Bank may be commenced where it is not desired to pay cash and full details of this facility will gladly be given on request at a Branch or to Head Office.



C. H. BERNARD & SONS LTD

6 - 8 QUEEN STREET, PORTSMOUTH, HANTS

Telephone 23535

Head Office: ANGLIA HOUSE, HARWICH, ESSEX Telephone 880

and at 30 Branches at Home and Abroad

Editor's Note

This article was published in the R.N.S.S. Journal in 1952 and is reproduced here by kind permission of the author and the editor of the 'Royal Naval Scientific Journal'.

Whereas science has moved on in the intervening period and concepts have changed in minor detail, the information contained herein is basically correct and should prove of wide interest.

A Supersonic Regulator for Divers' Breathing Equipment

by P. F. PAYNE, Admiralty Experimental Diving Unit

Introduction

This article describes the design and use of a most simple, robust and reliable device for metering to a diver, as he increases his depth under water, an absolutely constant mass of life-sustaining gas. It relies, for its performance, on maintaining a small diameter column of gas at the velocity of sound.

Summary of Elementary Theory of Breathing Mixture

In the standard diving dress the diver is fed with air by a pipe from the surface, and a high flow-rate is maintained through the helmet to sweep away the carbon dioxide exhaled by the diver. As air is composed of 21% oxygen he has at all times an ample supply of oxygen.

Stops

The remainder of the air of course is mainly nitrogen, which at depth is absorbed into the diver's bloodstream and tissues so that he becomes virtually like a bottle of soda water and if he comes up quickly from a great depth he gets a 'Bend'. This is when bubbles of absorbed nitrogen are liberated from the bloodstream and settle in the joints causing great pain. In very bad cases these gas bubbles can lodge in the heart with fatal results. We overcome this danger by having the diver make 'Stops' at various points during the

ascent and the gas is then liberated from his bloodstream at a safe rate. The diver can of course descend to his work very rapidly. The oxygen breathed does not cause bends and so we can reduce the time spent on stops by increasing the oxygen and reducing the nitrogen content of his breathing mixture.

The time spent on stops increases with both depth and time on bottom. As an example, after spending one hour at 82 ft., breathing air in a standard dress, the returning diver must make a stop of 9 minutes at 20 ft. and another of 18 minutes at 10 ft. Thus the total time on stops is 27 minutes. Making the same dive with a self-contained breathing set giving a 60% oxygen/40% nitrogen mixture, the diver need make only one stop of 5 minutes at 10 ft.

Self-contained Gear

Self-contained diving gear is of two general types. The soft hood type in which the diver breathes from a mask connected to a flexible breathing bag, and the rigid helmet type similar to the standard pipe-fed gear. Both self-contained sets are similar in that the breathing mixture is carried by the diver in high pressure cylinders and automatically metered to him. The mixture is breathed on a closed circuit through a canister filled with soda lime to absorb the exhaled carbon dioxide. Circulation is

effected either by the diver's breathing or by an injector operated by the incoming mixture.

Both systems have an adjustable outlet valve to release the surplus mixture from the breathing circuit.

The weight of oxygen used up by the diver depends entirely on his rate of performing work and is independent of depth. His oxygen consumption at the surface is .25 litres per minute when resting, increasing to 2 litres per minute during periods of hard work. An almost equal volume of carbon dioxide is exhaled.

Thus it would seem that if we fed the diver with 2 litres per minute of pure oxygen it would meet all his requirements, and this is what we do for diving in depths to 33 ft. But oxygen is toxic if breathed at pressure greater than 2 atmospheres absolute and can cause convulsions, so for depths below 33 ft. we use mixtures of oxygen and nitrogen.

When the diver is resting the oxygen content of his breathing mixture will be high and during a spell of hard work it will be low. The percentages of oxygen and nitrogen in his cylinders and the rate of flow must be calculated so that he does not suffer from oxygen poisoning when resting, yet during a spell of hard work his breathing mixture must not fall below 20% oxygen or loss of consciousness may result.

To obtain the greatest endurance from the set we must use the greatest percentage of oxygen permissible at the depths dived, and the smallest safe flow. For diving to 140ft., 38.2% oxygen is permissible in the breathing mixture, and a 40% oxygen/60% nitrogen mixture in the cylinders gives this with 8 litres per minute flow to meet the diver's maximum demands. If diving to not more than 82 ft. then a 60% oxygen/40% nitrogen mixture on 4 litres per

minute flow may be used with consequently doubled endurance.

As the diver consumes the same mass of oxygen at any depth so the ideal mixture metering system should deliver at constant mass to all depths.

Performances of Existing Reducing Valves

It is a difficult problem to maintain a constant gas flow against the widely varying pressures met with. Most sets use a pressure-reducing valve connected to the cylinders which are charged to 2,000 lb./sq. in. or so. This reducer delivers the gas at 50-200 lb/sq. in. to a jet or adjustable orifice which meters the gas to the flow required at the surface.

For diving in shallow water a simple uncompensated reducer is often used, and this gives a falling mass flow with increase in depth.

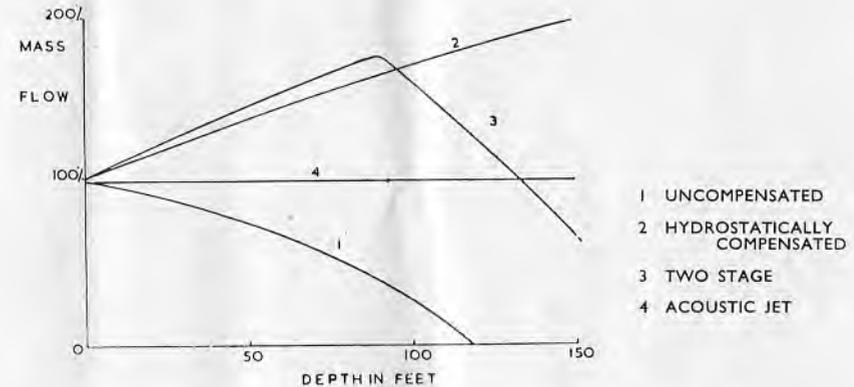
For normal diving a hydrostatically compensated reducer is generally used. In this the sea water is admitted to one side of the diaphragm with the effect that the reducer delivers at a constant pressure above the surrounding water pressure. The result of this is to give a rising mass flow with increase in depth.

Another method sometimes used is a two-stage reducer with the first stage uncompensated and the second stage hydrostatically compensated. This gives the rising mass flow of a compensated reducer until at some depth the second stage pressure is increased to that of the first stage. The second stage valve then stays wide open and the reducer operates on the first stage only. From this depth on it has the falling mass characteristic of an uncompensated reducer.

Probably the best of these reducers is the type in which the water pressure is allowed to act on only part of the diaphragm area and thus the delivery

pressure does not increase at the same rate as the water pressure.

Most of these reducers deliver over 50% surplus gas at some depth which is very wasteful and incidentally upsets the composition of the carefully calculated breathing mixture.



The worst feature of this varying flow is that a set which has an endurance of an hour at the surface falls to say 35 minutes at 90 ft. and maybe increases to 50 minutes at 120 ft. Thus the diver has to consult a chart to find what the endurance of his set will be on a given dive, and because of the times spent on stops at different depths he is never quite sure exactly how long his mixture will last. So he is rather wary of working to the full capacity of his cylinders. It can be seen that a method of ensuring constant mass-flow at all depths would materially increase the performance of self-contained diving gear.

Design Basis of 'Acoustic Jet'

If we pass the gas through an orifice at or above the speed of sound then any pressure change below the jet, transmitted up the gas column at the speed of sound until

it reaches the acoustic-velocity section, will make no further headway. Therefore the gas flow in and above the orifice will remain unaffected by pressure changes below. Using an uncompensated reducer to feed the jet, so that it is unaffected by outside pressure, the conditions in the jet will

remain stable and it will deliver an absolutely constant mass-flow in spite of varying water pressure. Only at the depth where water pressure reaches about 60% of the reducer pressure (both absolute), and the volume of 'pressure-gas' becomes too small to maintain flow at the speed of sound, will this constant flow fall off.

By suitable selection of orifice and pressure we can maintain any required flow to any depth. The orifice should ideally be convergent, but in practice we get good results with straight drilled jets. The parallel section must be long enough to accelerate the gas flow to the speed of sound and lengths of .03 in. or .06 in. work well for the sizes of jets we normally use. As a concession to streamlining we use a chamfered entry.

Orifices of adjustable area can be

used but it is usually simpler to have a fixed jet with an adjustable reducer.

The jet sizes can be calculated very accurately as follows:— Find the flow of pressure-gas required at the maximum diving depth. Use a jet of such cross sectional area that it passes this volume of pressure-gas at the speed of sound. From the simple relation of $Volume = Velocity \times Area$, we find that a .010 in. diameter jet will pass 1 litre per minute of gas at the speed of sound. From this figure all our jets can be quickly calculated (Table 1).

The pressures are best determined experimentally to obtain the desired flows through the calculated jet, and will be found to be about 1½ times the absolute water pressure at maximum depth.

Test Results

Results of original flow tests on an 'acoustic jet', 0.10 in. diameter and .05 in. long, are shown in Table 2,

Conclusions

This device offers a great improvement in performance over the previously used systems, and also has the advantage of great simplicity.

TABLE 1

Mixture	100% oxygen	60% oxygen 40% nitrogen	40% oxygen 60% nitrogen
Maximum safe depth (ft.) ..	33	82	140
Required flow of 'free' gas (litres/minute)	2	4	8
Required flow of 'pressure-gas' at maximum depth (Litres/minute)	1.00	1.15	1.52
Diameter of jet to pass required flow at sonic speed (in.) ..	.0100	.0105	.0125

These three jet sizes do not differ widely and so in a set using these three mixtures we can compromise on a .0105 in. or .011 in. diameter jet, varying the pressure to get the three flow rates. Then the 8 litres per minute flow will maintain constant mass to well beyond the 140 ft. required; the 4 litres per minute flow will be satisfactory to 82 ft.; and there will be a slight drop on the 2 litres per minute flow at 33 ft., but this is not important, as with pure oxygen the flow-rate affects only the volume of the breathing gas and not its composition, and the 2 litres per minute flow-rate is somewhat generous.

ously used systems, and also has the advantage of great simplicity.

An interesting incidental use is in the calibration of flow-meters under pressure. Previously we found this a difficult and not too accurate operation, but now, with a constant mass gas supply, we can calibrate the instruments quickly and accurately.

Experimental work is proceeding on the use of the device for accurately mixing two gases from bulk storage, as for example in the preparation of oxygen-helium mixtures for deep-diving use, and also for the mixing of oxygen and nitrogen (or air) from

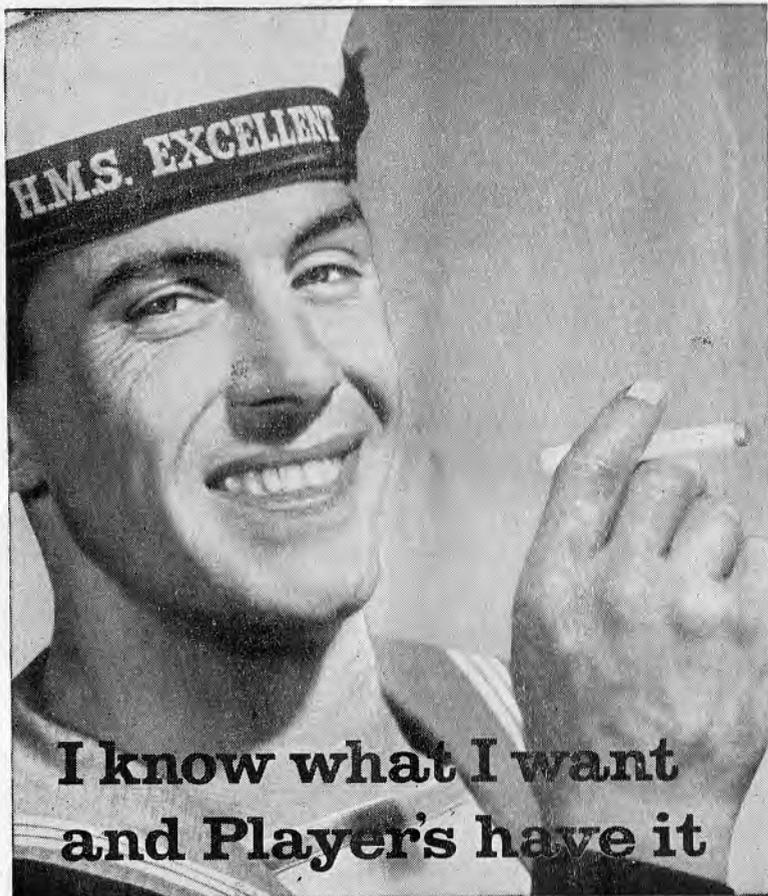
the separate cylinders carried by divers in self-contained breathing apparatus.

The applications of the device in diving equipment form the subject of an Admiralty patent taken out in the name of the author.

TABLE 2

Flow figures, in litres/minute of 'free air' for various reducer pressures and various depths of water.

		Reducer pressure (lb./sq. in. above atmospheric)								
		40	60	80	100	120	140	160	180	200
Depth in feet (salt water)	0	2.2	3.2	4.05	5	5.85	6.75	7.8	8.85	9.7
	10									
	20									
	30									
	40	2.2								
	50	2.15								
	60	1.9								
	70	1.7	3.2							
	80	1.3	3.15							
	90	1	3							
	100		2.8	4.05						
	110		2.5	4						
	120		2	3.85						
	130		1.65	3.5	5					
	140		1	3.2	4.95					
	150			2.8	4.8					
	160				4.55	5.85				
	170				4.25	5.75				
	180				3.75	5.6				
	190				3.25	5.35	6.75			
	200				2.7	5.1	6.65			
	210					4.75	6.5			
	220					4.3	6.3	7.8		
	230						7.7			
	240						7.6			
	250						5.85			
	260						7.4	8.85		
	270						7.15	8.75		
	280						6.8	8.6		
	290						6.5	8.4	9.7	
	300						6.1	8.25	9.6	
	310						5.8	8	9.5	
	320							7.7	9.35	
	330							7.3	9.1	
	340							6.85	8.9	
	350							6.3	8.7	
360							6	8.3	8	
Calculated maximum depth for constant flow (feet)		40	73	101	132	160	190	224	259	287



PLAYER'S

taste better



News from H.M.S. 'Narvik'

DUE to an earlier decision by The Lords Commissioners of the Admiralty, a familiar landmark of Malta sailed for the United Kingdom in October 1961. Namely H.M. Submarine Depot Ship *Forth*— known affectionately as 'MUM'.

She was replaced by the converted L.S.T. *Narvik*.

It will be appreciated, as a result of this changeover, accommodation had to be found elsewhere for the numerous workshops and stores, etc. that are required to keep the 5th Submarine Division and 108th Mine-sweeping Squadron in the manner which is expected. T.E.O. jetty was taken over and renamed *Narvik II*.

The divers were given a stone hutment — with bulkheads like duckboard, and roof that went 'on strike' every time it rained.

Late in December 'Ginger' Bryant (feeling, one must think, slightly out of place!) took office.

A new 'Charge in the Banks', a fresh phase of 'Acquire first and ask afterwards' provided us with fresh water, electricity, portable 25 foot outside workbench, outside bottle store and a compressor charging room. After this further A. and A's were halted, as the wrath of the local union was beginning to be felt.

At the end of January, part of the diving team set forth in *Narvik* to taste the pleasures of Genoa and Rome, and it must be recorded that the 'a la Carte' was sampled to its fullest capacity.

The 'doings' of the Submarines and Minesweepers keep the team fully employed with the usual 'run of the mill' jobs.

One operation which is now done as a matter of course is the destruction of the work performed by Nature's underwater landscape gardeners on the hulls of submarines.

Occasionally the Fleet Diving Centre call for our assistance to help qualify their overflow of Shallow Water Divers classes.

The Government of Malta requested the use of the team for dismantling the old Sliema Ferry Jetty. The Seafire served us with distinction when cutting through solid 8in. steel piles, besides providing us with good operating experience.

Two trips have been made to Mersa El Brega and Benghazi to assist Esso Products with relaying moorings, repairing main oil-pipe leaks, and surveying large concrete pontoons.

The team, hoping to share the pleasures of the local hostleries on a 'run ashore', were dismayed to find at Mersa El Brega, only a few tents and sand stretching into the hitherland.

A good opportunity to view 'arm-chair' diving was provided by a day-trip in the U.S.S. *Penguin*. The following day 'Ginger' and 'Shan' did a 'run' in their Rescue Bell after affecting a few minor repairs for them.

We left appreciating the excellent hospitality that had been afforded us but nevertheless with a feeling that British is Best!

That's about all the news so far. We are all sad to hear of the deaths of Sam Spencer and Chippy Sothcott.

At the time of writing the team is: Lieutenant Delaney (i/c); C.P.O. Bryant (S.D.I.) To be relieved by P.O. Bolton (Diver 1) in July. C.P.O. Bryant relieving C.P.O. Lock at the F.D.C. Malta;

P.O. Robbins (Diver 1); L.S. Rees (Diver 2); L.S. Morton (Diver 2); Sherpa Shennan (Diver 2). At the time of sending this, his B13 is in ship.

The Guardian of Horsea Island

by LIEUTENANT WALKER, R.N.

SOME few years ago, whilst carrying out the duties of Chief Diver at Horsea Island, 'Ginger' Bryant procured unto himself a goat of very tender vintage.

Having received the dubious benefits of a certain type of operation (more coarsely described as 'being doctored'), 'Ginger's' pet rapidly grew to giant proportions; which naturally invoked the respect and caution of all with whom he came in contact.

Victualled by, domiciled with and carried on the strength of the diving section, the goat became an integral part of 'Life at Horsea', and thereby hangs a tale.

As the years passed, Jan, (for that was the goat's name) became more and more of an institution, albeit one with dubious, and oft times dangerous principles.

Of independent nature and forceful character, Jan bowed to no man — except in the execution of a singularly painful manouvre, which brought his large horns in contact with the stern of some unsuspecting and luckless individual. A move which happened only too often.

Interest was always fully maintained in his whereabouts, of which one could never be certain, the whole island being his domain — and he wasn't averse to the odd trip across the footbridge to the mainland. On one occasion, Jan literally 'controlled' the traffic in the main road, near H.M.S. *Phoenix*, bringing consternation and near panic to a mass of dockyard cyclists, homeward bound.

He must be the *only* animal ever to *compel* such a group to quite literally conform with rule 60 of the Highway

Code. (The majority of them had never even heard of it anyway). Alas, the improvement in local road safety was of only temporary duration, for Jan was quickly captured, and, with horns muffled and hooves at the highport; he was swiftly returned to Horsea Island.

As time passed, responsibility for Jan's welfare was transferred from Chief Diver to Chief Diver, being accepted more and more grudgingly, in direct proportion to the increase in instability of the said goats behaviour.

Likewise, as time passed, so the reports of adventures, cases of near mayhem, injuries, scares, etc., relating to Jan, filtered through to the outside world.

The group of young Sub-Lieutenants, who, after a day at Horsea, returned ashen faced and much subdued, murmuring vaguely of a horned monster among the bushes, etc. Long Course T.A.S. (humorously scornful of previous reports) full of dignity befitting their station of life, changed in a moment, from a well disciplined body of men, to a widely scattered group under 'independent command', hastily revised their ideas regarding the animals capabilities, etc.

The dockyard matey, who having mixed some cement for a job, returned from his tea break to find Jan 'cleaning the plate'. The look of amazement and disbelief on the poor chap's face had to be seen to be appreciated.

(Jan is *surely* the only goat to have a reinforced concrete stomach?)

So it went on, incident after incident; many were the curses

rained down on our phlegmatic four legged friend, all to no avail. He stayed, monarch of all he surveyed, until he met up with Sam.

Now Chief Hurn was a man of no mean stature, and was sure of one thing at least. *He* was going to be in charge, *not* Jan, and for an uneasy period, near calm reigned at Horsea. Chief was sure he had established friendly relations with the goat. But it was a false friendship, as you will appreciate.

One day, literally caught bending, Sam was lifted over the hedge with the aid of Jan's powerful horns. The ensuing few minutes were more than hectic. With a roar, Big Sam burst through the hedge and, at flank speed, chased the goat down the road way for over two hundred yards, every other step giving Jan a boost in speed with the aid of a well placed size ten clog (which Sam wore). Two in number diving instructors, who witnessed the incident *swore* that chief was breathing pure helium, for the air was blue around him. After this display of authority by chief, there was a further period of uneasy calm, with Jan keeping his distance; although he was seen to watch Sam with a contemplative eye. Meanwhile the goat stuck to normal routine, vis, yaffling the odd hood, fin, suit leg, medal ribbons from jackets, R.A. members bag meals, etc.

Albeit, his temper must have been sorely tried on occasions, for he was tormented often by the 'character' in every class who came to Horsea. Friendly moves such as hosing him down with the freshwater hose, didn't exactly improve his temper. The final straw, as far as chief was concerned at least, was the initiation of Jan to diving.

A group of clots, deciding to give the goat his first 'nought to plenty',

seized him by the lower bands, so to speak, and hurled poor Jan into the lake. Sam, hearing the hulla-balloo, dashed out, took one look, and dived to the rescue fully booted and spurred. By this time, poor old Jan was well down by the bows (a natural phenomenon in goats) rapidly running out of oxygen, and showing progressively less inclination to take an interest in life. Chiefs' flying dive was non too soon. Firmly gripping Jan by a horn and leg, he managed to get the luckless animal onto the jetty.

Salvaging a heavily waterlogged goat, had roused chief's ire; and as soon as he was clear of the water, the miscreants were 'fell in' and every one of them had his horoscope read', then the whole lot were despatched on the circumnavigation of the island. Meanwhile Sam persuaded the bedraggled and very subdued goat to pump out double bottoms, and resume a somewhat shaky perambulation of the immediate vicinity.

Many, too, were the occasions when, on classes first arriving on the Island Jan saw fit to disperse them, prior to any official order being given. No respecter of persons, rank, or creed, this overgrown beatnik of a goat became the despair of all. Imagine the embarrassment of the young 'fly boy' lieutenant, heading for the tea hut with his swimsuit down around his waist; suddenly to be hauled up short with Jan eating his sleeve, and halfway up to the shoulder joint. Shying away from the hairy monster, he backed up to the wall, only to have Jan rear up on his hind legs, forepaws (or is it hooves) on his shoulders, licking the haircream off his boyish locks. Even a 'trick cyclist' on the old scale of pay, married, with no children, would have found it more than

difficult to decipher the immediate babblings of the poor chap. With a soul destroying shriek, he flung the huge form of Jan away from him, and literally flew into the changing room. Needless to say, that particular class began the next diving sequence one short.

The writer of this article has also had his moments with Jan, having had the benefit of his personal attention on two distinct occasions. The first, on leaving the changing room, our friend the goat was hiding behind the door; and, as Sir Hook appeared he was given direct and immediate assistance straight across into the drying room. Luckily the drying room door was propped open; otherwise Sir Hook would most certainly have 'kept a level head' — FOR GOOD.

The second of Jans' friendly efforts was to render assistance to Sir by helping him down the steps onto the diving platform; where, on regaining his breath and upright position, your helpless writer found himself to be the possessor of a badly bruised skin and a suit richly and newly decorated with GOAT DUNG. Unfortunately for all, and to the daily annoyance of the staff (who had to clean up the mess) Jan was a most liberal dispenser of the latter, spreading it around in the most unlikely places. (How did it get into a scrubbed-out proto bin four feet high?) The limit of Sir Hooks endurance was reached, when the goat, quite by accident, ripped open the hand that fed him.

Able Seaman Pearson was feeding him stale bread. Putting his hand out to pat Jan, the goat reared up its head and Pearsons' hand was jammed in the Vee of its' horns. A murderous looking gash was the result, which eventually necessitated fifteen stitches.

This little episode not only decided Jans future but had the unfortunate

result of temporary curtailing the Horsea 'labour force', to wit Pearson was put 'light duty'. A firm believer in the divers welfare, Sir Hook encouraged him to exercise his hand with the aid of a pick, which Sir very kindly allowed him to use. Needless to say, Pearson's recovery was rapid in the extreme, as he accepted the pearls of wisdom which were offered him with the pick: 'Tarry not, lest ye loiter'.

Regarding the unfortunate animal, contact was initially made with certain members of the 'Top Brass' in *Vernon*, with the suggestion that our goat should be groomed, fitted with an appropriate 'dress suit' blanket, and introduced to the public at large during the following Friday Divisions, as THE DIVERS' MAS-COT.

Whilst being *enthusiastically* accepted by the heirarchy of the branch, the proposal was considered too futuristic for the R.N. College of Technological Underwater Warfare. So, to coin a phrase, poor old Jan's goose was cooked.

Contact was made with the local branch of the Blue Cross Society, who sent up a small enclosed van for the prisoner. In the meantime, our goat was having the feed of his life; chalk, paper, sand, two old pattern bag relief diaphragms, egg shell, one sliced loaf and a half bar of pussers hard (washing soap). Contributions made by all and sundry as a parting banquet for Jan.

Game to the last, the old devil hadn't been in the back of the van two seconds before he was nibbling the tread off the spare wheel. The driver took one look, slammed the door, locked it, and scrambled into his seat behind the wheel, muttering, 'blimey. I had better get this B back to base quick, while I still have a van to do so'. As the vehicle

started off, we had a last sight of Jan through the window, placidly nibbling away at the tyre.

Although we have said farewell to him, it is understood that Jan is happily whiling away his remaining years in pastures new, a farm situated

not too far from Horsea Island.

His departure was duly noted in the diving section log, and the saga of 'Jan the goat, Guardian of Horsea Island', was closed.

Copyright. SIR HOOK.

News from 'Reclaim'

by DOC WRAY

AT the end of March, *Reclaim* returned to her base on the Forth after what must be one of the most satisfying terms since her commission in 1948. As far as diving is concerned, she is admittedly somewhat emasculated following the demise of oxy-helium diving, but the three months just spent in visiting Tenerife in the Canary Islands saw a great deal of valuable experimental diving performed and more than answered any of her critics. Perhaps, after all, T.A.S. poisoning is not such a lethal disease!

Why the Canary Islands? For some years R.N.P.L. has wanted to do a series of dives in water warmer than that found around Britain, to discover if temperature had a significant effect upon the incidence of bends on a given decompression table.

A word of explanation on the trials. The British Table is tested by performing at least 10 dives on each 'schedule', i.e. a given depth for a given time, and the number of bends encountered carefully recorded. In addition, similar dives are done on the latest American Table which has been modified to suit our practice, by making the stoppages multiples of five minutes. We are anxious to know which Table is better, especially as many N.A.T.O. countries have accepted the American version and have had trouble with bends. As it was necessary to test the Tables fully

and realistically, the safety measure of choosing the Tables for the next deeper depth is not employed and as a consequence, very accurate depth, time keeping and regular rates of ascent are necessary. Standard gear is used throughout and at present is the only practicable one for dives of this duration (about three hours).

Reclaim's team of Standard Divers is now under the charge of a C.D. for the first time — Sub-Lt. Nutty Carr and he makes no secret of his dislike for the antiquated gear! Chief Powis and his lads were reinforced by E.C.D.U. from *Vernon* under Lt. N. L. Merrick and P.O. Tom King. Apparently it is possible to steam cork. Surgeon Lt. Cdr. Eric Mackay from R.N.P.L. flew out later on and joined the ship at Gib. when she returned for a few days. We heard that there was at least one long face in A.E.D.U., B.F. had to stay behind for a change.

It is sometimes a little difficult to convince people that it is possible to work hard *and* enjoy oneself in this Navy. In an attempt to prove the point some statistics are now quoted (as supplied by Nutty Carr) and they can speak for themselves:

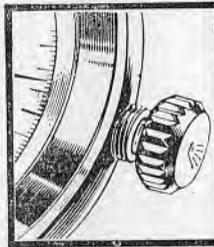
Number of wet dives performed — 136 in 21 working days which is a total time in the water of 21,995 minutes or 366 hours 35 minutes. The best day's diving saw 12 dives lasting a total of 35 hours 19 minutes. 10 bends requiring recompression



Stainless steel Rolex Oyster, £37.10s. See it at your Rolex jeweller's now

YOU WOULD BE PROUD TO WEAR THIS ROLEX OYSTER

THE ROLEX OYSTER is a watch which any man would be proud to own. Its permanently sealed Oyster case is 100% waterproof, dustproof and dirtproof. It is superbly accurate. It is elegant—you can see that—but actually handling it will tell you far more . . . and this is exactly what your nearest Rolex jeweller invites you to do. Call on him yourself, today—or write to the address below for a free, fully illustrated catalogue and his name and address. The catalogue shows the full range of Oyster watches, including the Tudor Oyster from £24.5s.



UNIQUE. *The Oyster is the only watch with the 100% effective screw-down winding button that gives DOUBLE protection where it is most needed, helps make the Oyster the finest waterproof watch.*


ROLEX
OYSTER

The official watch for Royal Navy Divers

THE ROLEX WATCH COMPANY LIMITED (Founder, H. Wilsdorf.)
1 GREEN STREET, MAYFAIR, LONDON, W.1.

were encountered and one hectic afternoon saw four dives recompressed simultaneously, three attending each other in one pot and the other with an attendant in the transfer under pressure chamber. With an outside air temperature of 80° F. it can be easily imagined how unpleasant were the conditions.

All of the time was spent at Santa Cruz the capital of Tenerife, largest island in the Canary group. There is a splendid busy deep water harbour very busily engaged in exporting fruit (mainly bananas and tomatoes), visiting luxury liners (the *Santa Maria* came in soon after the much publicised mutiny, preceded by the *Vera Cruz* bearing some of the survivors) and a brisk stream of large tankers to and from the refinery. The island is roughly 80 miles by 25 miles and volcanic in origin. It is impossible to travel anywhere without either going up or down. The scenery is magnificent, varying from thickly wooded hills and lush arable valleys to the lunar-like surface of a fantastic volcanic crater at 7,000 feet, dominated in turn by the hub of the Island — the snow capped 12,000 ft. Teide Mountain. The tourist trade, mainly Europeans and Americans, is still young but expanding rapidly. The second town of the island, Puerto de la Cruz, in the past a quiet fishing village, now sports a lido and grotesque contemporary-styled hotels.

It is undoubtedly one of the best holiday places today and is relatively cheap. In a first class hotel, private shower and toilet, bed and breakfast was about 12/6 per day. There are vast groves of banana trees and tomatoes to the South of the island.

The Captain's policy of anchoring off the harbour entrance for diving during the week and coming alongside at weekends was universally popular. The Spanish Authorities and civilians were as helpful as possible and many friendships were made. The local beer was very good and cheap; the Canary wines less so. During the stay, the temperature varied between 60–85° F. and we thought of those at home 'enjoying' the Scottish winter.

Two old friends of the ship, Spanish Naval Divers, Lt. Rios and Chief Diver Rubio joined for this third visit to Spanish Waters. Rubio was presented with a certificate by the Captain when he left and was 'poured' aboard his ship back to Spain with full ceremony by Chief Powis and supporters. Quite a chap when you consider he spoke no English and none of us had any Spanish.

Some time was found at weekends to do some recreational diving using S.A.B.A. and C.D.B.A. and this was a revelation to those of us used to the murky British waters. The colours



of the fish, rock and weed were fascinating. Unfortunately, the places suitable for the trials were muddy and had little or no visibility.

When the time to leave Tenerife arrived, we were ready to go, the prospect of Easter Leave in U.K. was

inviting, but I think it is fair to say that nearly everyone aboard would like to return at some time in the future. The ship left with a feeling of having done a good job of work and had a splendid run ashore, perhaps on a scale never to be repeated.

Sequel to 'Whisky Galore'

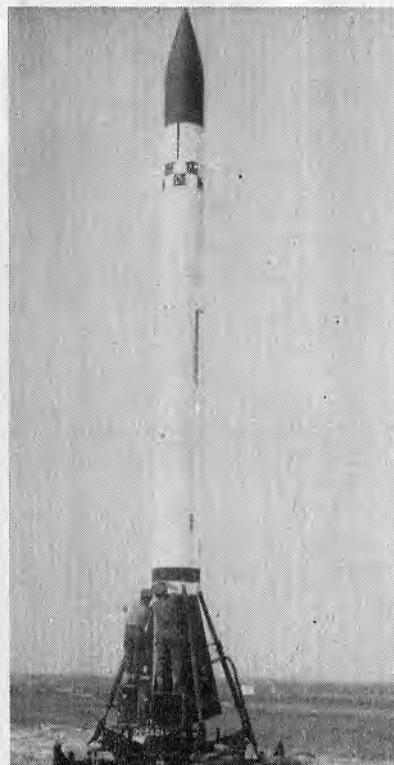
by LT. G. WOOKEY, M.B.E., R.N.

The widening scope of the divers' activities was never more evident than it is today — they range from prolonged experimental decompression trials to ejection underwater of a pilot trapped in an aircraft. And now the latest requirement comes with the introduction of test firing of guided weapons.

The Royal Artillery guided weapons range at South Uist in the Outer Hebrides was designed to test fire any type of guided weapon from the small 5 inch Starling booster rocket, up to the largest of the medium range ground to ground weapons. During this year's firing season it was intended to fire a number of improved Corporal missiles, 46 feet in length and weighing 6 tons. A highly dangerous mixture of liquid anniline and fuming nitric acid when fused, forms the propellant fuel. Maximum range of the missile, which may be atomic or high explosive headed, is about 75 miles and an impressive picture it is to see one fired at night.

A Diving team is required at the firings for the location and recovery of any misguided missiles, and the lucky team appointed were myself, Able Seamen Crimmons and Pigg. Two large Gemini craft were provided, and the Army produced a two wheeled trailer and a handling party headed by veteran Sergeant 'Skipper' Fielding.

Launching the Gemini at each firing was simplified by the use of the trailer but was by no means a tame



venture — the surf often being formidably high.

Happily for the Army, there were no errant missiles requiring recovery,

though it must be admitted that the Diving team were itching to get their hands on a missile underwater.

Much of the time between firing was spent driving the Geminis around in all weathers and conditions for evaluation purposes, and diving for fish and scallops.

Most people have read Sir Compton MacKenzie's novel, or seen the film 'Whisky Galore'. This was basically a true story and was about a ship called the S.S. *Empire Politician* which ran aground in the Sound of Eriskay, South Uist in 1940.

the driver to escape capture, into the airstrip which was then under construction. Several days later when he went to retrieve the stolen booze, he found to his horror that the area had been completely concreted over — to this day it remains, somewhere underneath an acre of two of 18in. of concrete.

The remains of the wreck were finally abandoned, the authorities believing them to be devoid of whisky.

It was perhaps natural for there to be a diving exercise in the area, on



The ship carried a cargo, it was said, of a couple of hundreds of thousands of crates of whisky due for shipment to the North of America. Repeated attempts at salvage resulted in the bow section being towed away complete with what whisky the local Islanders failed to get at. So much whisky in bond was taken ashore illegally that the local Customs officers had a tedious, though sometimes hilarious time trying to run the smugglers and the whisky to earth.

On one occasion a lorry load of this Highland liquor was dumped by

the days the team were not required for Corporal. After many hours of fruitless search, the tumbled remains were at last located — completely grown over with thick kelp seaweed. An interesting find of course, but divers, though of temperate habits, are loathe to leave even the smallest piece of wreckage without completely exploring the remains. When the first bottle of whisky was unearthed from somewhere deep in part of one of the bilges, the divers endurance under water suddenly showed a remarkable increase. When the

second and subsequent bottles were found, you can imagine the excitement!

As if by magic, the word had got around the Island when we beached the Gemini, and crowds of curious onlookers were there whilst we hitched the trailer bearing the Gemini to the land rover. It was somewhat difficult to appear nonchalant when the necks of the bottles were poking through the scallops and fish with which we had tried to cover them.

One might describe the day's events as a successful towed search exercise.

All good things come to an end of course, and so it was with this year's firing season. The Army, wonderful

hosts though they were, couldn't have been more helpful, nothing was too much trouble for them, particularly Sergeant Fielding, who I hope will be loaned to us for next year's firings'

Able Seamen Crimmons and Pigg have returned to the Diving unit at Portland, and yours truly to take over the Scottish Command Bomb and Mine Disposal Unit at H.M.S. *Lochinvar*, whose team now consists of (since May) Lt. G. Wookey, P.O. Alderton, Able Seaman Robbie Scott and very shortly A.B. Wannerton from Hong Kong.

If ever you should be down Eriskay way, try and get a dip on the wreck — most — Hic., interesting.

C-in-C's Commendation

by FRANKIE

IN January 1961 a Whirlwind helicopter operating from the Royal Naval Base at Portland, crashed into the sea some six miles South of Portland Bill Light. The crew of three were saved but the aircraft sank and was considered a total loss. There were no recognised symptoms for the crash and in the interests of helicopter safety, it was considered essential to recover the machine and endeavour to find the cause of the engine failure. Orders were therefore given to locate and salvage the helicopter and accordingly the following units were detailed:—

H.M.S. *Shoulton*, Minesweeper, to locate and mark the wreck.

H.M.S. *Miner III* with the Diving Team from Admiralty Underwater Weapons Establishment, Portland, embarked.

The Fleet Salvage Vessel *Swin* to lift the helicopter.

It will be appreciated that the success of the operation was entirely dependant on *Shoulton's* ability to locate and mark accurately and quickly. To the divers fell the tasks of first, confirming obstructions 'snagged' by the *Shoulton*, and second, of securing the lifting wires to the helicopter once it was located. The conditions in the salvage area did not, however, favour diving operations. Except for the slack water period of about 40 minutes each tide, a tidal stream of up to 3 knots ran through the area, the underwater visibility was nil, and the chartered depth was 170 feet. The depth was only 10 feet less than the maximum permitted with the equipment used, which was Clearance Diving Breathing Apparatus with mixture gas of 32½% Oxygen/67½% Nitrogen. With the foregoing in mind, it will be readily seen (even if fine weather and a calm sea prevailed) that this was to be no diver's picnic.

On Monday 23rd January the salvage units sailed from Portland for the search area. The wind was South Westerly force 4 to 5 and in the exposed salvage area the swell was 10 to 12 feet high with a corresponding sea state. On passage to the area the ships rolled like Glasgow trams, and both ship's company and divers had occasion to inspect the scuppers. Under such weather conditions diving operations would normally have been cancelled, but as speed of recovery and the possible future saving of life was the essence of this operation, the Diving Officer decided to 'Have a go'.

At 0900 H.M.S. *Shoulton* reported and marked a 'contact' and within 30 minutes the first diver was on his way down to confirm it. He reported that it was the helicopter and secured a marker line to it. Two more divers were then sent down with a lifting wire with instructions to secure it to the rotor shaft of the helicopter. The two divers reached bottom but while attempting to secure the wire, one of the divers thought his companions had passed out and quite correctly brought him to the surface. The partner had not in fact been in trouble and protested vociferously but unavailingly. The first attempt had failed but undaunted a fourth diver was sent down to secure the lifting wire. The tide by this time was beginning to run, and although the diver managed to secure the lifting wire to one of the helicopter wheels, he was then forced to surface, the second attempt had failed. The divers were operating from inflatable dinghies and by now the weather had deteriorated to such an extent that to remain in the dinghy was a task in itself. The operation was therefore stopped and, as nothing further could be done, the ships returned to Portland.

For two days the weather prevented diving operations and both ships and divers were confined to harbour. On Thursday, the third day, the weather moderated and the ships returned to the salvage area. *Shoulton* again located and marked a contact, which the first diver down confirmed as the helicopter. Monday procedure was repeated and a marker line was secured to the wreck. Two divers then descended with the lifting wire and succeeded in dragging the eye of the wire up one side of the helicopter, over the top, down the other side almost under the machine and shackle it to the rotor shaft. This operation, which entailed groping around the wreck in dark, tidal, cold and hazardous conditions for a period of 28 minutes, was a very creditable accomplishment.

The lifting wire once secured was passed to the *Swin* and in very quick time the helicopter was airborne as it swung from the davit head. The operation was successfully completed.

On both days of the operation, diving was carried out from inflatable dinghies and the recompression chamber in *Miner III* was used for surface decompression. These two items of equipment were essential for operations on the Monday and made for a more efficient operation on the Thursday.

While all are congratulated on their part in the operation, special mention has been made of the divers, and three have received a Special Commendation from the Commander-in-Chief, Portsmouth; Leading Seaman Templeton who carried out the first dive in appalling conditions thereby setting the standard for the others to follow, Leading Seaman Ayres and Able Seaman Dolan, who showed both skill and tenacity in securing the lifting wire to the helicopter.

Salvage Operation—'Anne Gaston'

by SEAN LUDGATE

IT was mid September 1953 when a rip roaring gale struck the small Fleet of French Fishing Vessels working off the fishing grounds to the South-West of the Irish coast.

Aboard the *Anne Gaston* a 90 ton wooden trawler, the situation was serious, hammered by tremendous seas the wheelhouse had been smashed, and down below the engine-room was awash. The chief engineer staggering forward to report to the skipper was washed overboard as another green sea shipped over the focsle.

Monsieur Gaston the skipper and owner struggled to keep his ship into the wind, a battle against the relentless sea which became more desperate as the hours of darkness

approached and visibility became worse; to Leeward loomed the rocky cliffs of Ireland and certain destruction. Hour after hour the *Anne Gaston* was pounded relentlessly; down below the crews quarters were awash and the Diesel engine was pounding away under 3 feet of water, all efforts with the pumps could make no headway.

Slowly the *Anne Gaston* was swept inshore; by some miracle the engines kept turning though the bearings were under water, and this enabled the skipper to scrape past a wicked offshore pinnacle of rocks giving him just sufficient steerageway to creep round under the lee of the 200 feet high cliffs, to ground across the mouth of a small triangular rocky

beach, where there was some shelter from the direct fury of the storm.

It was quite evident however that the ship was going to be broken up on the rocks and in the early hours of the morning one of the crew managed to leap onto the rocks and after a superhuman effort he scaled the almost vertical cliffs to summon help. A rescue team working from the cliff top managed to save all the members of the crew leaving the *Anne Gaston* to her fate.

A week later the news of the wreck has reached Mr. Sessions who was the Director of 'Sessions Marine' a shipyard at Crosshaven, Co. Cork; he came down to Castletownend, the nearest port which was some five sea miles from the wreck and hired a fishing boat to take him to inspect the *Anne Gaston*. By some freak trick, the vessel had been lifted clear from the dangerous rocks and now

lay with her bows tucked right up under the cliffs, the tide covered her decks at high water and left her almost high and dry at low water.

At first Mr. Sessions ruled out any possibility of salvage for the hull, but thought that it would be worth while trying to salvage some of the trawl gear and deck fittings so he returned to Crosshaven and contacted the French authorities with an offer of a nominal sum for the *Anne Gaston*.

Calm sunny days passed, and our anxiety increased with waiting for the answer, every day lost was vital, since a blow from the south-east would surely break up the *Anne Gaston* and the tides were making up to springs, after which the chances of working aboard would be greatly reduced. At the yard in Crosshaven the van stood loaded with a collection of tools and salvage gear ready to go at a moments notice. The plan was

SEA HORSE SUITS

New Low Prices!

STANDARD SEA HORSE £10
3/16" Skin/Cell Foamed Neoprene

SUPER SEA HORSE £15
3/16" Nylon Lined Neoprene

Both complete with Hood, Bootees & Mitts
The finest available at this or any other price

Send following measurements:

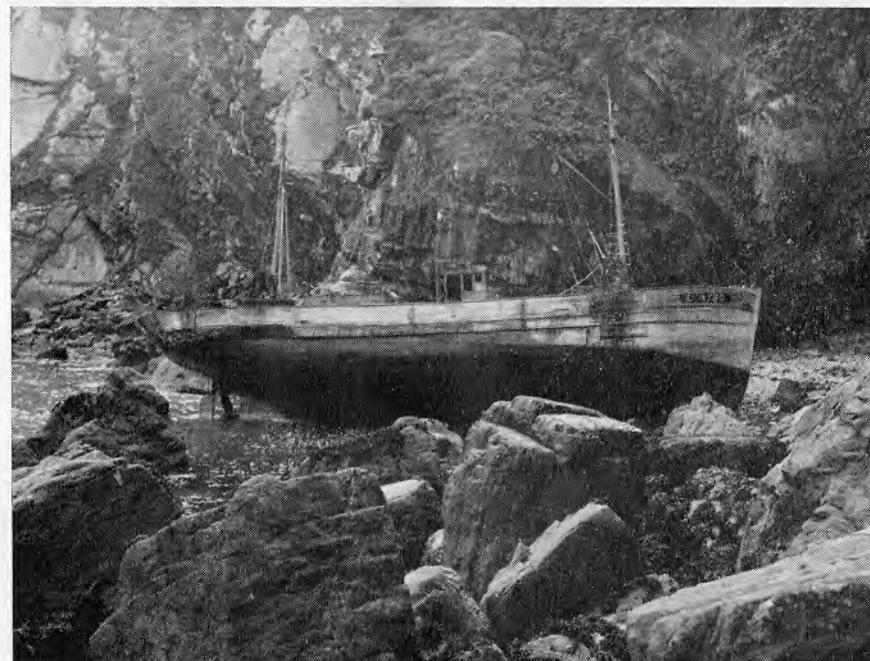
Neck, chest, waist, hip, inside leg, shoe size, arm length, to—

SEA HORSE SUITS

116a REDLANDS LANE

FAREHAM, HANTS

CASH WITH ORDER



decided. An advanced party should go down to the wreck and clear away the debris which included some five tons of rotting fish, to enable the main team to get to work unimpeded. At last on the 1st August the long awaited news came through, Mr. Sessions offer had been accepted, the French Authorities has written off the *Anne Gaston* as a total loss.

Within an hour the advance party consisting of Mick, Michael, Vesty Bush and myself were on our way.

The same afternoon we had chartered a local fishing smack complete with crew and headed out of Castle-townsend against a stiff W.S.W. breeze which whipped the wave crests into spray. The journey to the wreck took about half an hour, and when we anchored we were able to get a full appreciation of the difficulties we had to face.

A moderate swell rolled into the tiny triangle of beach where the *Anne Gaston* lay with her bows almost touching the vertical wall of menacing cliffs. Lying over on her port bilge the water lapped her port scuppers, the mizzen boom trailed over the counter, the tattered remains of her steadying sail washed to and fro in the swell, trawl wires and falls littered the decks, and, as we approached in the workboat, the atmosphere became almost eerie, long tentacles of seaweed swirled and sucked round her hull, the grating cries of seagulls echoed against the towering cliffs above us.

Getting aboard was not easy, the swell threatening to smash a hole in our workboat as we rose and fell dangerously near the rocks alongside. We managed to scramble aboard, and slithering across the oil soaked decks at an angle of 35 degrees we carried out our tour of inspection.

Down below was a scene of indescribable havoc, the crews quarters

was a mass of tangled cordage, broken upturned furniture, fishing nets, soaking bunk mattresses, the remains of bread loaves, broken wine bottles. The air was polluted with the reek of fuel oil which covered everything, and the stench of rotting fish.

The prospect of clearing such a sodden mass would have daunted the stoutest heart. Inspection of the wheelhouse revealed that we were not the first to have visited the ship, the pirates had been aboard before us and removed every instrument worth salvage, the radio had been smashed to pieces, valves and components littered the deck; very soon it was apparent that every scrap of gear of value which we had hoped to salvage had been looted.

However, we set to and rigged the derrick to discharge the tons of rotting fish overboard, then started cutting away the tangled mass of gear.

For three days we worked when the tide permitted us and managed to clear the decks and down below sufficiently to enable us to get at the hull structure.

On the 3rd of October Mr. Sessions arrived with motor pumps, massive timber legs, quick set concrete and more salvage gear. After an inspection of the hull at low water it was evident that she had suffered serious damage to her stempost as well as a hole amidships to starboard and possibly in the port bilge as well. The task of removing any of the heavy deck gear would prove almost impossible since we were only able to get alongside in the small workboat; the swell made this operation a hazard so Mr. Sessions decided to risk everything on getting her afloat.

Dick Leonard, the Yard Manager, and Vesty Bush, working up to the waist in the swirling tide, started to

fit improvised plywood and canvas patches over the gaping splintered hole in her starboard bilge, while the gang aboard cleared away boat loads of loose timber nettings and rubbish.

The next day saw a setback to our plans; we arrived off the wreck to start work in the early hours of the morning but the sea was building up and any attempt to get aboard would have been futile. The weather showed no signs of easing so we abandoned the attempt.

It was not until the 6th of October that the sea moderated and we were at last able to get on with the job once more. In the meantime we had assembled several 100 ton jacks and several motor pumps, these were manhandled into the workboat and then aboard the *Anne Gaston*.

At low water we located the jacks along under her port bilge and slowly we started pumping up the jacks, but these just bent the $\frac{1}{2}$ in. steel plates on which they were mounted and dug deeper and deeper into the rocky shore; there was no sign of lift.

It was impossible to continue the repairs until we had got her on an even keel. Before very long it was quite obvious that the jacks were useless and we would have to try another method.

Our only hope was the trawl winch. We had no power aboard of course, but there was a chance that we could operate the winch by turning the drive shaft with a large stilson wrench.

Before rigging up the gear we decided to empty the port fuel tanks to assist in lift. This operation took most of the day, and by the time the tide was lapping over the decks we had transferred several gallons of fuel oil into drums.

The following day, Vesty Bush climbed the mainmast and lowered the heavy cargo block which we dragged the across rocks and lashed to a large rocky outcrop. The trawl wire was then passed out through the forward Gallows over to the Gin block some hundred feet away to starboard and back again through the after Gallows to a chain tackle lashed to the mizzen. When the tide showed signs of turning we split into two parties, Mr. Session stood by the winch brake while Michael and myself manned the motive power end, which consisted of a large stilson wrench augmented by a 6ft. length of steel pipe which gave maximum leverage to our efforts to turn the main drive shaft.

Down aft, Dick Leonard, Vesty and Mick stood by the chain tackle. After several hefty swings on the stilson the slack in the trawl wire was taken up, blocks, sheaves and wire creaked ominously, so we waited for the tide to help us and every half hour we heaved in inch by inch.

Watching the truck of the mainmast against the cliff one could see the slight roll of the ship as the swell lifted her bilge off the rocks.

Mr. Sessions timed our heaves to synchronize with the slight roll of the hull, jamming on the brake of the winch each time we gained a few inches. After about an hour it was quite plain that we were moving her, the angle of the deck had lessened greatly but the singing and crackle of the trawl wire scared the daylight out of us. Down aft the mizzen mast was bending 8in. to starboard in way of the tackle, so we decided to stiffen this by sawing away the boom which we wedged under the hounds hand of the gallows and wedged the lower end against the heel of a bulwark stanchion.

THE OUTSTANDING CIGARETTE OF THE DAY



WELL MADE · WELL PACKED

VIRGINIA TOBACCO AT ITS BEST

At this moment the ship shuddered from stem to stern, there was a sickening crump! and a cloud of rust as the brake slipped on the winch. All hands ducked under the bulwarks expecting the wire to come lashing across the deck; luckily the wire held.

We had no idea of the condition of the wire or of the alternate stresses which were being imposed; it was about the craziest operation we had ever tried. Nevertheless the Devil looks after his own, and slowly we began to win as the added lift of the tide on the empty port fuel tanks eased the strain.

By 1630 we had her about upright and locked the winch brake. The 16ft. long baulks of Elm which we had prepared as legs were juggled into position and bolted through the hull port and starboard with fore and aft guys rigged. We had won the first round of the struggle and life was very much easier now we could walk about on a level deck.

The following day we could see the extent of the damage to the port side. There was no gaping hole as we had imagined, only a few sprung planks, so Dick and Vesty got to work ramming in caulking along the seams and improving temporary sealing splines, etc.

Down below the gang onboard were mixing quick-a-set concrete for cement boxes. We poured cement round the stem frame, between the horn timbers and between all the wooden floors under the tail shaft.

As the tide rose work had to be abandoned on the hull outside and Dick and Vesty came onboard soaked and shivering with the cold after almost two hours in the water, a very noble effort indeed. However they seemed none the worse for wear once they had changed into dry

clothes and had gulped a mug of hot tea.

The tide was rising rapidly so we started the motor pumps, taking soundings of the levels inside and outside the hull. It was evident they were making no headway at all, and by high tide the level down below was hardly an inch below the sea outside.

We decided that there must be a very serious leak somewhere below the low tide level which was inaccessible, possibly the garboard strakes aft, or somewhere in the deadwood, so we returned to Castletownsend and Mr. Sessions journeyed to Cork for more motor pumps.

The handling of the heavy 3in. pumps proved too difficult for mere brute force and manpower, so we had to use the derrick on the fishing boat. Coming alongside the *Anne Gaston* in a heavy swell needed great care and skilful handling on the part of John Deasy the skipper, but he managed to keep her clear of the rocks while we put the pumps onboard.

We now had eight powerful pumps aboard and the noise was deafening as we started them chattering away on deck, pumping hundreds of gallons over the side.

Gradually the water level began to fall and by high tide we could hear the keel bumping on the rocks, we were afloat, but this was not good enough. There was still a very serious leak somewhere and we could not possibly risk taking her off. It was with very dampened spirits that we once more had to abandon our efforts. To add to our disappointment, the weather began to deteriorate, and we had visions of having to give up after all our hard work. The tides had now passed Springs and the attempt had to be made to float her within the next two days

or we would not have enough depth at high water. Another day was spent patching up and filling in along the keel with more cement boxes, but with little better results, on top of which half of the motor pumps went defective through magneto and other troubles, so it was with very depressed spirits that Mr. Sessions, Mick and I went off on Sunday morning the 11th October to try and work out a solution to the problem, the remainder of the crew were to come aboard at midday.

For two hours we sat down below watching the water level fall as the tide receded outside, we could hear the gurgling of water but couldn't detect where the flow was escaping, so we hit on the idea of floating paper boats to see which way they would float. Sure enough they moved steadily forward towards the engineroom, contrary to all our expectations. We moved forward and ripped up the engineroom plates. By the time the engine flywheel was clear of the water we could see plainly where the trouble lay; the water rose and fell between the engine beds.

The tide was nearly at its lowest ebb and there was no time to lose if we were to stop the leak. Unfortunately before we could get near the trouble spot we would have to move a massive compressed air cylinder under the engineroom plates. Shouting to Mick to start mixing cement, Mr. Sessions and myself started unbolting the heavy steel securing straps, holding the 10ft. cylinder in its chocks. We had no time to wrestle with all the pipe joints so we attacked the pipes with a hack-saw in a manner which would have made a self-respecting engineer weep. Compressed air hissed and sprayed us with water from the bilges; inside ten minutes we had a strop rigged

round one end of the cylinder and hoisted the cylinder up on one end which allowed us to work underneath.

By this time Mick was ready with the concrete, which was poured down under the engine between the wooden floors; bucket after bucket went in after the receding water until the cement was level under the engine-beds.

We were in the middle of this operation when the rest of our crew arrived aboard. The tide was at its ebb, and we could only pray that the cement would set in time to plug the leak before the tide rose again. At 1400 the tide turned and by 1500 a motor pump was started to keep the level down, and at last we appeared to be keeping the water at bay. An hour later the seams under the counter began to spray jets of water and a small waterfall cascaded down from aft; nevertheless the pumps still kept things well under control.

Urgent messages were sent back to Castletownsend for every available boat to come out to assist in the tow.

At 1700 a fleet of small boats ranging from motor launches to fishing craft were standing by, word had soon spread through the village and the cliff tops were lined with interested spectators.

We passed towing wires over the counter to two fishing boats, the *Anne Gaston* now bumping her keel on the rocks was well afloat and ready for the dash to safety. The anchor wires for'd were cast off and slowly, as the strain was taken on the towropes, she slid from under the cliff face.

A great cheer went up from all on board and the watching crowds on the cliffs.

Once clear of the rocks the towing wires were changed and passed through the for'd fairleads. The

fishing vessels *Richard* and *Timber* took the strain and *Anne Gaston* headed into the open sea.

The wreck had come to life once more and rolled easily in the swell.

Down below water poured in down the counter and a second pump was brought into action. It was not long before the swirling debris below was sucked round the suction roses of the pumps, even though we had put the roses inside steel oil drums perforated and covered with netting. We started four more pumps but one by one these packed up due to choked suction boxes or mechanical failure.

We had five sea miles to cover before we could reach the shelter of Castletownsend harbour and we were already in trouble, the water level was gaining rapidly down below. There was nothing for it but to take off the pump roses and lower the open pipes below. This did have some affect but one by one the pumps died on us. We were in a very desperate situation — three miles to go and we had to resort to manning the hand bilge pumps while efforts were made to clear the choked pumps. The quickset concrete must have been giving way, because the waterlevel below had risen a foot above the engine flywheel. However, we managed to keep two pumps running and this kept the water from gaining too rapidly.

Up ahead the two fishing boats had been supplemented by a third, and now all three were pulling with throttles wide open, pounding into the moderate sea which was running clear of the sheltering headland.

By 1740 water down below was only three feet below the hatches, as we rounded the rocky Island at the entrance to Castletownsend harbour.

At last we were in calmer water and the two remaining serviceable pumps

poured water over the side without further trouble. A quarter of an hour later the freeboard aft was down to 12 inches, she was almost on the point of foundering but the beach was in sight and there was a mighty sigh of relief when the keel grounded a cable distant from dry land on the hard sandy beach.

Thus the *Anne Gaston* was brought to safety. I do not wish to bore my patient readers with the details of her subsequent history but it may be of interest to hear the aftermath of this episode in brief.

After a week on the beach at Castletownsend, Dick Leonard and his shipwrights had managed to refasten the sprung plating and recaulk the leaking seams. Even this operation was nearly fraught with disaster, on one occasion the legs which held her upright on the beach sank deep into the sand and she fell over on her bilge. It was only after they had righted her to find seaweed nipped between the planking that they realized how much the hull had worked.

On another occasion the wind increased to gale force and the *Anne Gaston* was driven across the harbour trailing her parted anchor wires; it took a whole night fighting the gale to get her back on the beach.

However, in spite of all the hazards, repairs were made, and the only available towing craft arrived at Castletownsend to tow her back to the yard at Crosshaven.

This vessel, an ex-'C' Class, *Fair-mile*, was most unsuitable for the job due to her shallow draught, but Mr. Sessions had no option but to take the risk.

Our fears in this respect were not without foundation, and we all but lost everything during the journey home.

The weather, which was fine, sunny, with a slight sea when we cleared Castletownsend, gradually deteriorated, and by mid-day we could see the pumps working hard aboard the *Anne Gaston* which was a bad sign. Dick and his crew were having more trouble trying to keep the suction boxes from becoming choked with the oily mass of rubbish swirling in the bilges. On two occasions we had to renew the bight of wire at the stem head of the *Anne Gaston* which was chafing through, the grass rope was paid out to its fullest extent to ease the shocks as the force of the wind increased to half a gale.

By the late afternoon we were being driven towards the rocks off the Old Head of Kinsali, the *Fairmile* was labouring flatout to try and keep steeyageway. For seemingly hours we battled to keep clear of the rocks under our lee, until, by the grace of God, we managed to clear round the headland and steamed into Kinsali Harbour against a rip-roaring tide.

Here again after shortening the tow we nearly came to grief, the skipper of the *Fairmile* found it almost impossible to handle his charge in the narrow channel. The *Anne Gaston* was brought alongside, and with her 13ft. draught she made steeing very tricky against both wind and tide. One of the two effective engines in the *Fairmile* packed up and we drifted within a few fathoms of the rocky shore, but luck was with us and a counter current swept us clear. By the time we were safely alongside the quay at Kinsdale dusk had fallen. A few days later the final trip was made from Kinsdale to Crosshaven, where half the population turned out to see our arrival.

One might think that Mr. Sessions had had enough trouble for his efforts, but the *Anne Gaston* was not

giving up without a struggle.

The depth of water at the end of the slipway was 9ft. at high water springs and *Anne Gaston* was drawing 13ft. aft. Two large rubber 'Camels' were brought down from Cork and lashed under her counter port and starboard.

The day of high water springs was blustery and even in the harbour there was quite a chop on the water. However the attempt to get her on the slipway had to be made. At the top of high water she floated onto the cradle and the legs made fast alongside.

Slowly the winch inched her up the slipway for about twenty feet; all went well until with a sudden bang the shackle on the hauling gear parted.

When the tide left her we found that she had lifted the cradle off the rails and was now some 18 inches to one side listing dangerously.

All efforts with Jacks proved hopeless, the soft mud gave no foundation to exert any lifting force. We had no possible means of raising the 90 ton hull back to the height of the slipway rails.

The only answer was to saw away the keel and burn away the keelbolts to allow steel girders to be passed underneath.

The cradle was unbolted and re-assembled on the rails. This operation took several days and the precarious position of the *Anne Gaston* shored up in the soft mud was most dangerous for the shipwrights working under her.

With the hull of her keel now some 18 inches below the bottom of the slipway rails, a trench 2ft. deep had to be dug right up the slipway and across a tarmac road to allow her to come up the slip.

However all went well and she was hauled up into the yard balanced on one side of the cradle.

After months of work the keel and stemframe were replaced, most of her bottom was replanked, the 375 H.P. 'Mann' Diesel Engine was lifted out and stripped by Mr. Jackubait, an expert on Diesels, who re-ground all the bearing by hand and re-assembled the whole engine; now she was once more a sound seagoing vessel.

Such heroic efforts and hard work on the part of Mr. Sessions, his Yard Manager Dick Leonard and the Shipwrights from the yard should have been better rewarded than they were, but bad luck took another turn at the wheel.

Mr. Sessions was forced into liquidation and had to sell the *Anne Gaston* for a song; I believe she is now operating off the North Wales coast.

'Deepwater' Division Sports Notes

C.P.O. R. H. G. MCKINLAY, *Sports Representative*

IT is my duty to report to all sporting types that we have had a poor response to sports from *Deepwater* during the wet season of winter. I am hoping it is just a phase that we are going through, and that we will sweep the board with summer sports. Perhaps I have painted things a little blacker than they really are because I am pleased to report we have had some success. First of all our road race team of Able Seaman Sutton, Able Seaman Upton and Petty Officer Bell won the *Vernon* road race for us. Our footballers got us into the final of the *Vernon* Shield which we lost to Tenders 7-4, Lieutenant Parry scoring all our four goals. To date we are lying second in the inter-port Challenge Shield. As you know the Challenge Shield is a competition where each division works its way up the 'league' challenging the one above at any of the sports — it wishes.

Unfortunately up to now the division below us will challenge at Badminton. I ask you! have you ever seen divers play this? anyway in the last match my partner was Senior Commissioned Gunner (T.A.S.) F. X. Sequeira of the Indian Navy. We

were 'just a little' out of condition, but made a real effort. It was nice to see an officer representing *Deepwater* again, other than Lieutenant Commander Filer and Lieutenant Parry.

In the Rugby field we have five playing at one time or another for *Vernon*, and of course Able Seaman Burton not only representing *Vernon* in cross-country but running for the Navy as well. The *Vernon* Hockey team was permanently graced with at least two divers throughout the season.

We are, from the look of things, going to have quite a few to represent *Vernon* in Water Polo this season. As the trials have only just started I can't say who yet.

Before I close I would just like to make a note that in one Football match the total age of the forward line was 190 years, so I am hoping that our younger divers will really put us on top in the summer. With more moral support I know we will succeed.

I would like to thank Lieutenant Commander Filer and Lieutenant Dodd for helping us with the organization.

E.C.D.U. Notes

EXPERIMENTAL Clearance Diving Unit having returned once more to the Mecca of diving, the time has come to put pen to paper to give an account of what has been happening these past few months.

Towards the end of last year the Unit was rapidly disappearing; only six strong at the time we were spread fairly well around the country with three at Glen Fruin—continuing our liaison with Doctor Rawlins and the Institute of Aviation Medicine on Underwater Ejection Trials—one at Portland deep swimming (with A.T.T. I hasten to add, not by himself), one looking for things that go bang on Norfolk beaches (at least, that's his story) and the Boss ardently trying to give Lt. Gratton a bend in the *Vernon* pot (little did he know . . .!) Apart from a change round of C.D.1's we down South were not to see the Glen Fruin counterpart until just before Christmas and then only to sign their leave chits.

Us at Portsmouth indulged in a little Christmas (Dick) Tusonery, struggling up and down Horsea Lake with an undersized dustbin strapped to our backs. Fortunately this fiendish device only recorded our depth, had it recorded our compass keeping qualities, it must be stated, the results would have looked more like Alderney Track Charts!

Just before going on Christmas leave we learned that we were to join *Reclaim* for three months in the Spring to help out with her Table II trials. The first two weeks of January were spent checking that the Seamanship Manual hadn't changed since we last went to sea and having 'acquaintance dips' (big joke) in standard equipment from *Miner III* in *Vernon* Creek and out at Spithead.

This puzzled some of our brother C.D.'s, was countered with many spirited comments—latest stuff!—very secret!—never catch on etc. The ex-standards of our company (very wisely) said nothing. Thus forewarned, expectant and not a little apprehensive we embarked in *Reclaim* and set sail (literally) for warmer climates.

After a short time at Gibraltar we arrived at Santa Cruz de Tenerife, Canary Islands, which was to be our base for operations for the next six weeks. A weekend ashore before starting work was a welcome rest and we all took the opportunity to look at local sights (and make our local contacts for future reference). The island can only be described as fabulous, with acres of beautiful blue sky, temperature in the 80's and sea, warm enough for divers to swim without suits.

A diver's paradise, both above water and below it—and in the Plymouth Command too!

The Table II trials have already been described in previous articles so it is sufficient to say that nobody appreciates the necessity for stops more than E.C.D.U.

For the Unit, the highlight of the visit was ten days going native. As *Reclaim* was returning to Gibraltar for a short maintenance period in the middle of the trials, we decided (to quote the official report) 'to take advantage of excellent local conditions' to carry on with deep swim and other E.C.D.U. trials. So, when *Reclaim* departed we stayed behind with her diving launch to continue our own work. We also had Doctor Wray and M. (E) Pettit, both of *Reclaim* with us, who besides their obvious help in their professional capacity gave invaluable service as

HIGH
25-40%
CO₂
ABSORPTION

Anaesthetic quality Sofnol Soda-lime is used in over 30 countries for Anaesthetic apparatus, respirators, oxygen administration, air purification in confined spaces etc., and is available in 3 grades—White (non-indicating), Green and Violet (self-indicating), in granule sizes $\frac{3}{16}$ " to 40 B.S.S.

Analytic quality Sofnolite is a special self-indicating soda-lime for gravimetric CO₂ determination.

SOFNOL

NON-HYGROSCOPIC SODA-LIME

SOFNOL LTD., WESTCOMBE HILL, GREENWICH, LONDON, S.E.10

STERLING PRICE
£
LOW

attendants, etc. We in our turn managed to give them a fair whack of their regulation 120 minutes.

During our stay we formed a liaison with the local 'sub-aqua experts', though they did not seem to belong to an organised group as in U.K. One came for a days diving with us and although he spoke no English and we spoke no Spanish I think we managed to impress and interest him. We are surprised to find their knowledge of the physics of diving was so limited and many hours were spent 'ear-bashing' and doing drawings. However, we were suitably impressed at their courage when one showed up a photograph of himself standing beside a 7 ft. Mako shark which he had caught with his spear gun! They also told us that a local business man was offering 1 million pesetas (just under £6,000) to anyone who could dive to 200 metres (660 feet). Unfortunately *Reclaim's* helium panel no longer existed and though hydrogen was considered we did not really have the right equipment. Any taker . . . Lt. Wookey? . . .

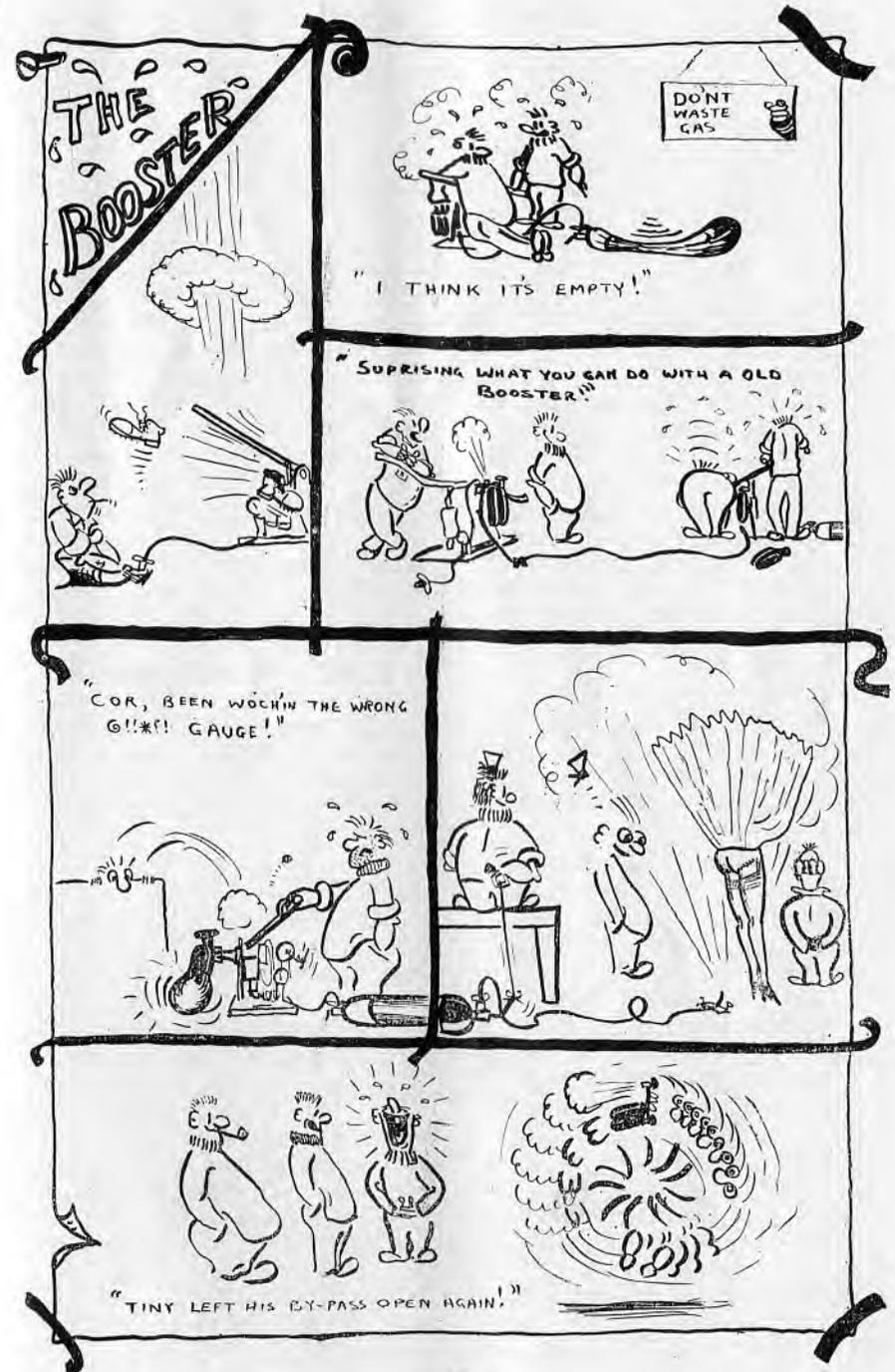
On *Reclaim's* return we rejoined her (rather unwillingly, we must admit) very sunburnt, rather short of money but with an extensive knowledge of the basic Spanish vocabulary. Our unofficial motto, hitherto 'Trials Minded' now bears a sub-title 'No Pongar Aciete!' After two more weeks Table II diving we set sail once more for Gibraltar where we joined with practically every other diver in the Navy that could be scraped out of the barrel and our S.B.S. compatriots to take part in a combined Exercise. Although this was a cold, wet and miserable exercise, the unique occasion of some 50 divers collected together in one little space was celebrated to no mean tune. We had a diver's bus laid on for us — an old ambulance — kindly loaned to us by S.N.S.O., which was

absolutely perfect for all the things a diver wants a vehicle for. It also had four bunks!

After the exercise, we took part in a little cave-hunting for the Dockyard Engineers who had a water supply in a cave containing 500 tons of fresh water. Since they had drawn off 12,000 tons of fresh water without any drop in the level they quite naturally wanted to know where it was coming from, particularly in view of the shortage of water in Gibraltar. *Shoulton* did the original reconnoitre but lack of time prevented them from coming to any conclusion. *Reclaim's* team took over but then gave it to us. So, armed with outcave-hunting equipment, a miscellany of divers from *Shoulton*, M.F.C.D.T. and E.C.D.U., together with Doctor Mackay from R.N.P.L. went into the dark depths. We recorded 126 feet of water then ran out of light, so the mystery still remains for future exploration. Always with an eye to business, we all remarked on what a splendid night club the cave would make, complete with it's own bathing pool of crystal clear and beautifully warm water!

Returning once more to 'our ship' we set on 'Pompey revs.' and steamed to Portsmouth again, returning to *Vernon* and leave, and leaving behind us happy memories of a close liaison between E.C.D.U. and *Reclaim* and a most pleasant and interesting trip.

Our role call at present is Lt. Merrick, (C.D.O.), P.O. King, (C.D. 1.), L./S. Hough (C.D.2) (just in case one remembers that far back and says 'I knew a Hooley Hough but that was years ago, he must be on pension now', I can assure you it's the same one!). A.B.'s Redford and Martin (C.D.2.) and Johnson (D.3.) The latter has joined us as a result of a reorganisation but more of that in our next report.



A Visit to the South of France by Yeovilton Sub-Aqua Club

by LIEUTENANT W. L. J. WARREN, R.N.

THE diving stands at the Boat Show this year sent our thoughts winging from the London January to sunshine and new diving horizons. The perfect combination we found, this Easter, at the French Naval Diving School run by Commandant Laboucher. The location, the small fishing village of St. Mandrier, is on the extreme western arm of Toulon Bay, and it takes about 24 hours' driving time, which we spread over 2½ days, to get there from Le Touquet. In that time our interpreters weighed off various phrases — 'Stek ouf and chips' and so forth — which proved invaluable and the drivers re-orientated to the right of the road, sometimes.

Commandant Laboucher put the after mess-deck of the school's diving launch at our disposal for accommodation and the chefs provided liberal helpings of French-Style food thrice daily.

The domestics once settled, the diving started, and our host very generously insisted that we use their bottles, which were ready charged daily, and their weight belts too. Thus equipped, and accompanied by one of their instructors, we started our famil dives on Easter Monday — a grey day above the surface, but with 40 - 50 feet visibility and a variety of colour below. During the morning each pair had a 15 minute look around, and then followed this with a session of set-ditching and free ascents — to get used to the French harnesses. These dives were made from pontoons just off the school, a set-up very similar to Horsea Lake— but off the shore.

In the afternoon we went out to a nearby mole and lighthouse and, with two pairs of divers down at a time, we each had about 40 - 50 minutes' swimming. The sea bed was similar to that around Horsea Forts — large rocks and concrete slabs with myriad tiny fish close in, and levelling out to a sandy bottom at about 70 feet, but the clarity of the water gave much greater colour to the surroundings. Two of the divers swam down and out to the 100ft. line but saw nothing beyond a suspect mine-horne and all! This turned out to be a mooring for anti-submarine nets which hung down from the surface, covered by small fish swarming in and out of its links.

On the next day the school came back from their Easter Leave and we began the routine which we kept for the rest of the stay. Dividing the day into two diving periods, we spent one session in the local area and went out around the coast or across the bay for the other. During these dives we all got a ride in the towed survey sled, a 'Martian' looking apparatus which was very easy to control, but difficult to ride. To see below as well as ahead required contortionist abilities and telescopic arms.

The diving locations which we visited were generally between 50 and 80 feet, with sea-beds ranging from rocky slabs and outcrops to sand and weed beds. There were lobsters, langoustes and crabs at the rock sites, but they were elusive, and we didn't know their hiding habits well enough to make large hauls. Octopi were easier meat and the old 'Med' hands landed several of them from the area around the school.

We found that our greatest impression was the visibility and colour refraction underwater. It was usual to enter the water and see right down to the bottom, 80ft. away. In this way the whole sea bed was laid out before our eyes and we could pick the most likely sites for closer exploration.

Unfortunately we spent longer on travelling than we had anticipated and our stay was cut short at five days; we could cheerfully have spent at least twice as long at St. Mandrier and would then have been able to visit both the coral beds and the Ile de

Levant — the latter as interesting below as above the surface, we were told.

The stay was a most wonderful opportunity to see both the French divers and their home grounds, and we were very well looked after in every way. Air and boats were at our disposal whenever we asked and we were shown the most interesting and lovely underwater locations by the instructors who seemed to enjoy themselves as much as we did.

It was as well that we found the sun in France, for the rain started as we drove home from the Airport.

'Schnorkelled'

(To whom it may concern)

WAY back in the 'Summer' of 1960 a lad of eight years old was rescued from drowning by the prompt and intelligent action of a Leading Airman and two other ratings from H.M.S. *Ariel*. Just in case somebody else can profit from the lesson I learned, I venture to tell this story though the frightful picture of what might have been scares me to death every time I think of it.

The lad in question was very fond of the water and being fortunate enough to live close to the beach had plenty of opportunity for bathing. In spite of this however his aquatic achievement up to this time amounted to half a dozen overarm strokes, which, combined with fairly orthodox kicks, propelled him for a short distance, albeit mostly underwater. Like most beginners he had not been able to master the art of breathing at the same time as he performed the other physical functions necessary to swim, in fact, it was something of a family joke that he appeared to have distinct tendencies towards qualifying as a diver.

One of his pastimes during the long periods spent splashing about in the Solent was to don a schnorkel and facemask, and whilst up to his waist in water, bend down and peer into the usually murky sea in the somewhat vain hope of studying the small crabs and other inhabitants of the shallows. One Sunday however, he decided that breathing whilst submerged was greatly facilitated by using the schnorkel, and such being the case, it ought to help him considerably in his efforts to swim. He put his theory to the test and found it worked, with the result that he was observed to be travelling like a fast schnorting submarine on that particular afternoon.

The next opportunity he had of demonstrating his newly aquired prowess was the following Tuesday evening when a friend came and collected him and took him down to the beach with some other children. He was first in, and promptly started flogging up and down a stretch of water close in, and paralled to the beach, using his schnorkel and swim

mask. The other children came out of the sea after about 15 minutes and the friend noted that our lad was still going strong before giving the youngest child a hand to get dressed. It was whilst this was happening that the very alert rating from *Ariel* came along and observed the inactive body of a young schnorkeller in the water. Having asked the nearest person whether the child belonged to him and receiving a negative reply, they decided to investigate and risk being laughed at by the onlookers and possibly the child, if in fact he was merely taking a prolonged rest and looking at the bottom. Whilst divesting themselves of their clothes however, all doubt as to the need of action was dispelled as the schnorkel drifted clear of the lad and his body sank lower into the water. The rescuers went into action, lifted the body out of the water and onto the beach where they successfully applied

artificial respiration (Schafer's) until a Doctor came along and made arrangements for the patient to be removed to hospital. It took some 20 minutes before regular breathing was restored and a certain amount of water ejected.

The lad was kept in hospital overnight and after being fully X-rayed was sent home the following day apparently none the worse for his experience.

With a view to establishing the reason for this youngster almost drowning in his own depth I did my best to collect all the information I could concerning the accident.

The facts appeared to be as follows:—

- (a) He had been swimming very energetically with schnorkel and facemask for about 20 minutes.
- (b) It had taken some 20 minutes to restore normal breathing and

water had been ejected from the mouth.

- (c) Although there was plenty of people about and he was quite close to the shore, nobody other than the ratings from *Ariel* realised there was anything amiss, hence it would appear fairly safe to assume that there was no struggling or cries for help.
- (d) The X-ray results were satisfactory and there appeared to be no irritation of lungs which suggests that the water taken in was swallowed and not taken into the lungs.
- (e) On return the next day the lad was quite normal and unperturbed by the accident, about which he had no real recollection. There was no evidence whatsoever of any fright associated with a person almost drowning whilst still conscious.

From the above I draw the conclusion that the boy over exerted himself whilst swimming with schnorkel and facemask and produced a state of rapid shallow breathing whereby his exhaled breath did not

clear the schnorkel, and a build-up of carbon dioxide resulted. When one considers that the vital capacity of the average 8 year old boy (1½ Litres) is little more than one third that of the average 19 year old youth, it seems quite feasible that under conditions of rapid shallow breathing (panting), carbon dioxide may well rise to a dangerous level in a schnorkel tube.

My doctor friends, who are obviously more likely to be correct, favour a different theory. They argue that the inside of the schnorkel tube will produce turbulent flow close to the walls of the tube due to skin friction, and lamna flow down through the centre. The effect of this, they tell me, is to produce hyperventilation whereby carbon dioxide is carried away at a very high rate, and deprives the person concerned of the stimulus to breath which may lead to unconsciousness.

Whichever argument is the correct one I feel the lesson is that we must keep a wary eye on young 'schnorkellers' and see to it they that don't overdo things.

'Keeping the Flag Flying'

by LT. J. FUTCHER, R.N.

THE Demonstration Clearance Diving Unit, consisting of Lieutenant John Futcher, Chief Petty Officer 'Hoppy' Hopewell, Leading Seaman 'Lofty' Brooker, 'Donkey' Bray, 'Spadge' Sparrowe and Able Seaman 'Ginge' Bichard, joined *Shoulton* at Chatham on 29th June 1959. On 3rd July, *Shoulton* proceeded to Portland in preparation for an intensive work-up period which commenced on 14th July. Weather conditions were very good and the work-up was most successful.

On 26th August, *Shoulton* in company with R.F.A. *Surf Pioneer* sailed from Portland for Norfolk, Virginia, by way of the Azores and Bermuda. One day only was spent in the Azores and two weeks in Bermuda. Training dives took place daily during those two weeks and all equipment was tested. Many fish were speared underwater, the largest being a 16½ pound Hogfish, and a considerable quantity of 'Royal Doulton' china, in excellent condition, was recovered from the berth

*For Uniform and
plain clothes of Distinction*

Branches at
22 RAILWAY STREET,
CHATHAM

12 TAVISTOCK ROAD,
STOKE, DEVONPORT

14/15 CASTLETOWN,
PORTLAND



**81/82 QUEEN STREET
PORTSMOUTH**

CATALOGUES AND PRICE LISTS SENT ON REQUEST

of R.M.S. *Queen of Bermuda* in Hamilton Harbour.

We parted company with *Surf Pioneer* in Bermuda and on 21st September sailed for Norfolk, where we arrived two days later and met the U.S.S. *Bittern*, our host-ship and American counter-part, for the first time. Norfolk is a typical Naval Dockyard Port and apart from the numerous enlisted men's and officers' clubs was not very exciting. On 5th October in company with U.S.S. *Bittern* we sailed for Key West where we arrived on 11th October, after stopping off in Charleston, South Carolina, for two days.

Key West is the most southerly city in the United States and is connected to the remainder of Florida by the Ocean Highway which runs from Miami across the Keys and miles of bridges to Key West. It crosses, among others, Key Largo of Humphrey Bogart fame, Marathon, famed for the length of the drinks and Pine Key where a famous brand of disinfectant is said to have originated! Key West can be described as the end of the line and I understand it is, too, for many of the entertainers in the shadier night spots! It is a semi-tropical city with a large percentage of its population made up of Cuban immigrants. There is a lot of life to be found but prices are very high.

It was very enjoyable to dive in the warm tropical waters of the Gulf but the visibility on the bottom never exceeded about seven feet as the fine white coral mud was continually being disturbed by a swell set up by high winds. The seas off Key West abound in game fish of all types including sharks. Fortunately, however, we were not pestered by them very much. The ones we encountered were usually three to four feet long and only one ten footer was seen.

The small sharks usually kept their distance but on one occasion Leading Seaman Bray had to do a lot of prodding with his *'Poky Stick' to keep a particularly hungry one away. * Stick with point to poke at sharks.

The water temperature at Key West averaged 75° F. and the air temperature was usually in the upper eighties or lower nineties with a very high humidity. This naturally precluded the wearing of rubber suits.

On 4th December *Shoulton*, with *Bittern* in company, sailed from Key West and arrived at Port Everglades, Fort Lauderdale, Florida next day. Fort Lauderdale is about 20 miles North of Miami and is a regular little millionaire's paradise. There are literally hundreds of night clubs and hotels sporting first class entertainment and each attempting to compete with the other with gaudiness of their neon signs. A fabulous city of vacationers bent on enjoyment and we were there at the beginning of the season! Unfortunately we were there for only one week and a working week at that. It is rumoured that during that time, though, two members of the diving team lost their hearts to local damsels.

The diving was good in the area and the visibility was the best experienced during the whole trip, averaging forty to fifty feet in about 75 feet of water on a sandy and rocky bottom. The tidal current was negligible here and no monsters of the deep were encountered. Incidentally it is understood that *Shoulton* was the first Royal Navy ship to visit Port Everglades, a new port which is still in the process of expansion.

Shoulton and *Bittern* sailed from Port Everglades on Saturday 12th December and arrived at the U.S. Naval Amphibious Base, Little Creek,

Norfolk, Virginia on Tuesday 15th December.

Christmas and New Year were spent at Little Creek. Christmas being spent in a typical British manner with plenty of food and drink, and the New Year welcomed with a hearty divers' party!

Shoulton sailed for Washington D.C. on 4th January, and after navigating the Potomac River arrived in the capital on the morning of 5th January. Several demonstrations of the equipment were given to visiting U.S.N. officers and a number of dives were made in the Potomac, which at this time had the colour of strong tea mixed with tinned milk and of about the same consistency. During the period in Washington it was arranged for the full diving team to visit the U.S.N. Deep Sea Diving School; this was most interesting and instructive. Our own Superintendent of Diving would be in paradise if he had similar equipment and the same wonderful facilities. It was also arranged for visits to be made to the F.B.I. Headquarters and many other places of interest. It may be interesting to note that there are about five females to every male in Washington!

On the morning of the 11th January we sailed from Washington and arrived back in Little Creek that evening. Operational diving recommenced a few days later in Chesapeake Bay in cold muddy water. At this time the air temperature varied between 20° F. and 30° F. and the water temperature was 38° F. slightly different to the conditions experienced off the Florida coast. Diving continued in the Chesapeake until mid-February when we moved location to Yorktown on the York River. While on passage up the river, time was taken, at the request of the U.S.N. authorities, to search for 25 filled hedgehog projectiles, which had

been lost overboard from an ammunition lighter in October 1959. After about 80 minutes in the area the projectiles were located, one was recovered, and the remainder buoyed. Ten days later, when operations off Yorktown were completed, we were again asked to relocate the projectiles, and this time we decided to recover them also. This was accomplished handraulically, hoisting them one by one into the ship's boat.

While at Yorktown, a small early American village, most people visited the battlefield where George Washington defeated General Cornwallis and ended, apart from a few isolated areas, the American War of Independence. It will be remembered that the Navy failed to reach the Chesapeake in time to take off Cornwallis and his battle weary troops before they were forced to surrender to Washington. (We were slightly too late to carry out this chore?)

Horseback riding on ex-U.S. Cavalry chargers, was one of the more interesting pastimes indulged in during the short stay at Yorktown, and many exciting hours were spent galloping through the wooded land on the banks of the York river. I think there is nothing more wildly hilarious than seeing Jolly Jack, astride a mount at full gallop with the bit between his teeth, and completely out of control shouting whoa, stop you b - - - stop, a sight that would cheer even the sourest of hearts.

On 7th March we sailed for New York City where we arrived the next morning and berthed in the Brooklyn Naval Shipyard. No diving operations took place in New York, but a complete reconnaissance of the down town dives was carried out by the divers! The weather was bitterly cold during this period, the temperature frequently falling to about 12° F. and

piles of filthy snow all along the sidewalks, in some places deep enough to bury a car, but nothing could daunt 'Jack's' urge to see Broadway, Fifth Avenue, ascend the Empire State Building and visit the United Nations Headquarters. Unfortunately the visit only lasted three days and then we sailed for Newport, Rhode Island, arriving on 12th March.

Diving operations commenced off Newport on 21st March and continued until 21st April. The water temperature here was approximately 37° F. and the air temperature varied between 20° F. and 40° F.

From the run-ashore point of view Newport was acclaimed by the ship's company as the best they had experienced during the whole tour, and judging by the numbers of weeping friends on the jetty when we sailed it can well be believed. The Newport people were very pro-British and few if any of the ship's company left without experiencing their very warm hospitality.

At 0100 on 24th April *Shoulton* sailed for Halifax, Nova Scotia, where she arrived on 25th April for a three day operational visit. Many old acquaintances, between the D.C.D.U. and the Canadian divers from H.M.C.S. *Granby* were renewed. I was royally entertained by my Canadian associates and the unit was invited to a 'diver's party' by the ship's company of *Granby* which was well attended and thoroughly enjoyed by the entire assembly. Only

one day's diving was carried out off Halifax, and a few demonstrations given alongside in the harbour itself.

We arrived back in Little Creek on 30th April and commenced the final phase of diving operations in Chesapeake Bay on 3rd May. The weather was much warmer by this time and operations were completed on 7th May. On the 18th *Shoulton* sailed for Bermuda and arrived two days later. After three and a half weeks in the 'Beautiful Island in the Sun', during which time all the diving was for pleasure, *Shoulton* sailed on 14th June, in company with R.F.A. *Wave Chief*, and arrived in Portland, England on 24th June.

The ten months trip to the United States was not all 'beer and skittles' as some may well imagine. A tremendous amount of work was done and a large percentage of it in adverse and extremely cold conditions. The small allowances received were insufficient to compensate for the very high cost of living in the States, and most of the places visited were dockyard ports.

During the 12 months spent in *Shoulton* well over one thousand dives were carried out without accident or incident. On no occasion were operations held up or delayed by divers or diving conditions. The unit operated through gale, rain, hail, snow, frost and scorching heat, and in every way was a credit to the branch.

Royal Engineers Diving School, Marchwood

by DAVID JONES

LIKE the sleeping beauty (!) the divers of *Marchwood* have come out of their long, deep sleep and have at last got a real job of work

to do. In view of this I thought the time had come to take pen to paper and write an epistle to our friends in the Royal Navy.

For a long time there has been talk of a Royal Engineers Diving School at Marchwood, and after a lot of hard work this has materialized. At the moment we are running the basic shallow water diving courses which last a fortnight. The first lesson we have learned is how difficult it is to turn out the required number of divers. We were warned that we should expect a high failure rate and so far this has certainly proved to be the case, barely 50% surviving to the end of the course. However, we are determined to keep the standard high and the accent is certainly on quality rather than quantity.

Our chief problem, and one which seems to beset most divers, is equip-

ment. At the moment we have 12 old Siebe-Gorman C.A.B.A. sets which have been condemned so many times it is becoming rather more of a joke than a problem in certain quarters. However, they do have their advantages in training since anyone who can dive in the murky depths of Southampton water using a C.A.B.A. can undoubtedly dive anywhere using anything!

This, I hope, is only a temporary set-back, for last summer we carried out trials on three civilian sets in order to choose a replacement. The sets tested were the Normalair, the Siebe-Gorman Mistral and the Heinke Lung.

The Mistral and the Heinke Lung both gave about the same results on



'Now who is wearing the best gear?'

trial but in the end the Heinke was chosen. Firstly, the set was thought to be considerably more sapper-proof than the Mistral, bearing in mind the harsh treatment inflicted by the more virile species of Pongo. Secondly, the Heinke has a two stage reducer which is extremely robust and simple and which incorporates a tilt valve with venturi action.

We are therefore living in high hopes of receiving new Heinke sets, and I hope that by the time you read this they will have arrived, allowing us to banish the old C.A.B.A's to the museum where they belong.

The rest of our equipment consists of a reasonable supply of two-way stretches together with fins, etc. For charging purposes we have two three-stage compressors coupled up in parallel and pumping into a common reservoir. Also in our collection are three sets of standard,

together with a new Heinke Mk 4 compressor which arrived before Christmas for trials. This standard gear still remains the favourite amongst the few veteran divers at *Marchwood*, who are very sceptical about the advantages of using only self-contained.

As regards craft we are lucky. We have 100 ton ex-German freighter from which to 'op in the oggin' and a M.F.V. for trips to deeper water. (Any unknown vessels observed removing lobsters from the vicinity of the Pompey forts may be traced to *Marchwood*).

To end I should like to thank all those at *Vernon* who have given, and are still giving so much help. Remember, you will always be very welcome at *Marchwood* where apart from dirty water we also have excellent beer.

Command Naval Bomb and Mine Disposal Unit

by LIEUTENANT COMMANDER W. Y. MCLANACHAN, R.N.

BUSINESS with the Portsmouth B.B. and M.D. unit has been fairly quiet since the last issue of the magazine. Most of our activities during the past three months have been spent in dealing with the usual crop of smoke candles, squids and other miscellaneous items of T.A.S. flotsam, including a practice torpedo on New Year's Day ('Mac Hough-magendie'.)

However, we had one bright spell during the week ending March 17th 1961, when we travelled over 1,000 miles. During this B. and M.D. 'Odyssey' we disposed of two Mk.7 Depth Charges and one Mk.1 mine. The mine was trawled up by the Grimsby trawler *Ampulla*, eight miles

South-East of Flamborough Head, and brought into Grimsby roads. For the benefit of those lacking a classical education, an Ampulla is a big-bellied Roman vessel or jar used by the Romans when taking a bath (See picture of the mine on the deck of the *Ampulla*).

The depth charges were laid by our 'friends' the R.E's in June 1940, and were intended to be used as demolition charges for the destruction of road bridges, if Hitler's operation 'Sealion' had been successful. We have now disposed of four of these charges in the Clacton area and there are probably more to be found. The photograph shows one of our happy (or should I say slap-happy) mem-

UNBEATABLE VALUE

ALL WOOL WELL TAILORED

P. O. UNIFORM

DIAGONAL SERGE SUITS

ALL SIZES
IN STOCK

£7.19.6

PERFECT FIT
GUARANTEED

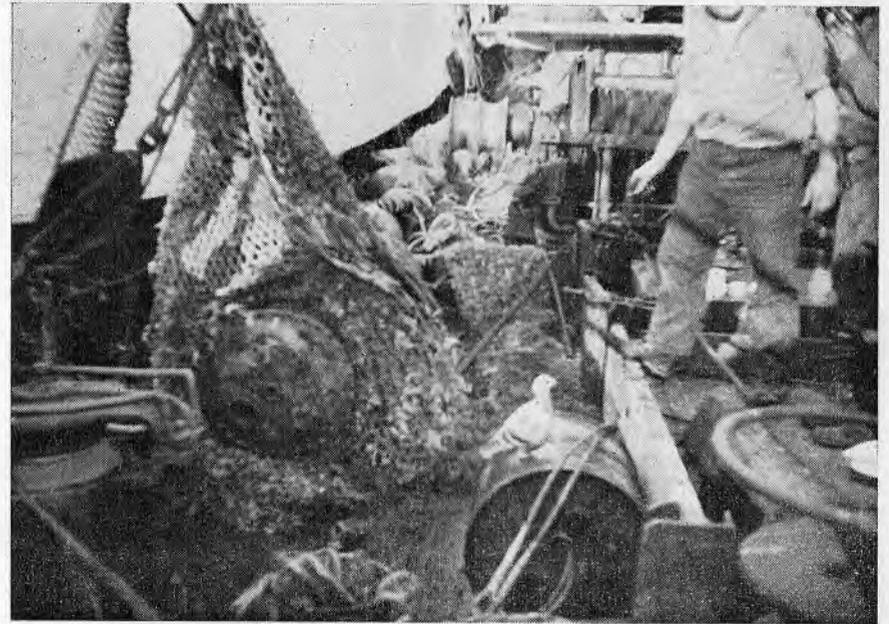
Cash or on Allotment Account

GREENBURGH BROS. LTD.

123/6 Queen Street
PORTSMOUTH

47 High Street
GOSPORT

also at Devonport, Chatham, Portland, Malta, H.M.S. Heron



Mk. 1 Mine on trawler *Ampulla* at Grimsby Roads, March 16th 1961. Photo shows mine after removal of detonator, primer and main filling. A friendly pigeon sits on main filling.

bers ascending from the 20ft. deep shaft in which these depth charges are usually found. The hole, of course, is always well tamped with sand and sand bags, so the removal of the charges involves considerable

hard labour.

“This I’m pleased to say concludes our news, And discretion prevents me from airing our views.”



Preparing to raise a Mk. 7 Depth Charge from Golf Green Road, Jaywich, near Clacton, March 15th 1961

Diving Trials at Glen Fruin

by ‘J.W.’

OVER the past 18 months, several teams of divers have operated at the Admiralty Hydro ballistic Research establishment at Glen Fruin, assisting the Institute of Aviation Medicine, and Industry, in their investigation into the problem of escape from ditched aircraft. This has entailed the use of techniques far beyond the general scope of the usual day to day diving operations in the Fleet and has proved once again the flexibility of the Clearance Diver.

One of the hazards of operating aircraft from ships is the liability of the aircraft to take a sudden plunge into the sea with little or no warning, from an altitude which renders escape by parachute out of the question. Fortunately, in the past, aircraft have tended to float for a considerable period which has afforded the crew a fair chance of effecting an escape. The advent of the jet plane has considerably reduced this tendency, for the engines

being not only exceedingly heavy, but basically little more than highly specialised drainpipes, offer little or no obstruction of flooding up, and the only structures providing temporary buoyancy are those few compartments of the wings and the fuselage which are not occupied by mechanical and electrical equipment, and the cockpit.

When the present generation of Naval aircraft was visualised, the situation was observed to deteriorate further, for their design necessitated taking off and landing with the pilot’s canopy locked, and their weight exceeded 15 tons, about double the weight of a London ‘bus, and if you can visualize the problem of escaping from a London ‘bus dropped into the sea from a height of 50 feet you will readily appreciate that aircrew were becoming a little apprehensive about the possible outcome of ditching.

In June 1954 the matter was discussed at the Ministry of Supply and at the same time a survey was made of recent ditching incidents. The latter revealed that 30% of aircrew involved in any kind of ditching failed to escape, and there appeared to be no record of successful escapes from aircraft which had entered the water in the inverted attitude. It was concluded that a practical investigation of the problems involved in the abandoning of a submerged aircraft was an urgent requirement.

Subsequently, various proposals for facilitating escape were put forward, ranging from the siting of explosive charges to the cutaway part of the fuselage, enclosing the cockpit; to the provision of large flood valves which would allow the water to enter the cockpit rapidly, and thus prevent the creation of a large differential pressure between the air trapped within it and the water surrounding the sinking aircraft. The Institute of

Aviation Medicine favoured the use of the ejection seat which, if it could be made to function under water, would carry the pilot clear of the wreckage and subsequently release him from his seat harness and allow him to swim unimpeded to the surface.

This line of research was accepted and after considerable investigation into such problems as:— The effect of the shock wave from the ejection gun cartridge; the effect of the drag endangered by driving man and seat through the water at high velocity; the effect on the lungs of rapid expansion of air when a man was shot from greater to lesser depths; trials on underwater seat ejection were commenced. That is why Clearance Divers have been finding themselves in the most unusual position of being strapped in aircraft at odd angles and then being lowered into the water. Nobody will deny these tests have proved a somewhat exhilarating experience.

Broadly speaking, part of the fuselage of an aircraft, containing both pilot’s and observer’s compartments, is mounted on a steel frame suitably ballasted and then lowered into a 60 foot tank of water. Preliminary runs are made to check the possibilities of the aircraft imploding under pressure and then the Diving team and the Doctors from the Institute of Aviation Medicine (wearing breathing apparatus) take it in turns to descend in the aircraft to various depths, and try to jettison the canopies, and escape by firing the ejection seat.

One’s impressions created by the first attempt are unforgettable. The fuselage sinks into the water and, at a pre-designed depth, a window blows in, which allows the internal and external pressures to equalise with a rush of water which buffets the sub-

jects inside the fuselage and threatens to dislodge their face masks. Suddenly the rush of noise and water is all over and one then ejects the canopy and fires the ejection seat. After what appears to be a comparatively gentle push one is clear of the aircraft and all that has to be done is to release the quick-acting mechanism securing the seat straps and swim to the surface.

All very simple and straightforward, which it undoubtedly will be when finalised, but, as with all research works, things do not always go according to plan as Surgeon Commander Rawlins found when the

secondary breach disintegrated on him during one run, and C.P.O. Hopewell found, when he had to breathe water for two minutes when his breathing set let him down.

During the trials it is practice for the subjects in the aircraft to wear breathing apparatus and although a pilot does not wear an underwater breathing set when flying, he does in fact have a very efficient built-in breathing set in the shape of his oxygen supply which should cover the requirement to breathe during his immersion.

LT.-CDR. S. A. WARNER.

H.M.S. 'Protector'

10th March 1961.

DEAR ED.,

It must be some time since you have heard from the *Protector*, so here are just a few lines about our diving activities this season.

I was a trifle mystified as to what I was joining when I first saw the ship but quickly earmarked the garden shed on the back end as a diving store. Then the flight joined and said sorry but that was the hanger but there was a nice compartment down below about 7×6×3 which should do me very nicely.

Next came the problem of filling it, all gear having been returned.

Scene: E5.

'About your demand for masks, Sir, 3384 is obsolete. You will have to take the new wrap-round, wide-vision model.'

'Splendid, I'll take a dozen.'

'Sorry, Sir, the order for production hasn't gone in yet.'

'Very well, I'll take the old type.'

'Sorry, Sir, we haven't any. They're obsolete, you know.'

We got our gear eventually solely through the hard work of the stores clerk who prised out equipment, jealously hoarded in stores all over the country and by the generosity of the Diving schools who parted with their own gear to get us operational.

I won't say any more on this subject or you will have to enlarge the magazine.

Apart from one practice dive before leaving home and another at Gib., no work was possible until we reached Port Stanley. The cruise down the west coast of South America was enough to keep any diving team on the surface. However, once we arrived in the Falkland Islands, the work came thick and fast.

The first job, four days after our arrival, was the salvaging of several cases of spares for sheep-shearing machinery and baling strip which had been lost when the boat into which it was being loaded capsized. As usual, no one had marked the spot but everyone knew exactly where it was — it took us three hours to find it and another four hours to complete the job.

On the way back to Stanley, the skipper of the boat from which we had been diving handed round his guns — he had a veritable arsenal on board — which meant death to anything that moved within gun range.

We sailed then to South Georgia for our first sight of icebergs, penquins, and more diving, this time to erect a tide pole for some of Owen's surveyors whom we had embarked at Gib. We landed over the bows of the whaler, equipped with rifle, harpoon gun and newly sharpened knives, as the day before, a leopard seal had been seen on the beach. For the benefit of the uninitiated, a leopard seal can skin a penguin with one flick of its head, will attack a whale and has been known to attempt to board small boats in order to get at the occupants. However, leopard seals were there none, only elephant seals, weighing up to two tons which make revolting noises when disturbed. That reminds me, we hear that Sam Hurn has retired. Give him our regards if you see him.

As usual, when there is diving going on there is an audience. This time the spectators consisted of a number of interested penquins and shags, who obviously wondered what these amateurs thought they were doing, as well as a crowd of female fur seals which made amorous advances at Ben Thornley who hasn't shaved for seven months. However, we eventually got the tide-pole erected and returned to the ship. Five days later came a despairing cry from the surveyors, who we had left ashore. Would we please come and put the pole up again. We had rigged it in the middle of an elephant seal's bathing pool.

Besides repairs to the government M.F.V. *Philomel*, which have accounted for quite a number of dives,

we have surveyed piers, surveyed R.R.S. *Shackleton*, surveyed oil-lighters, surveyed *Protector*, surveyed moorings, surveyed . . . it's not the diving but writing the reports that's the hard work.

The sea temperature averaging 40 degrees, I have had a good opportunity of comparing a neoprene wet suit, worn as an undersuit, with conventional woollens. The suit, which is 3/16 single skinned and cost £7 in tailored kit form, is a skin fit and proved the most comfortable undergarment I have yet tried. It also has the advantage that, in event of a wet dip, it remains comfortable and in fact works better. I make a practice of holding it under the hot tap before putting it on. For swimming it is undoubtedly superior to woollens and gives good protection against cold. I found, however, that for static work in temperatures below forty its efficiency dropped noticeably after about quarter of an hour's immersion.

We have also tested U.B.A. at a temperature of 29 and found no snags at all. If anyone wants any particular cold weather tests carried out just let us know.

There are still another two months of this commission to go, most of which are occupied by the trip home via South Africa, but I think that the opportunities of diving will be few.

There is undoubtedly money to be made in the Falklands by a couple of divers with gear to about 120 feet for, apart from the considerable number of small jobs to be done, there are over 250 wrecks around the islands. However, until someone sets up in opposition, *Protector* will continue to be a pretty good diving billet with plenty of scope.

If you see anyone sitting around in a cold bath and complaining its too

hot you'll know where he comes from, so till then,

Good luck;

THE ICICLES.

Lt. Christmas, D.O. (F.D.)

Lt.-Cdr. Burley (F.D.)

Sgt. McKerracher (S.C.1.)

A.B. Thornley (D.2.)

L./S. Williams (D.3.)

A.B. Setchell (D.3.)

A.B. Watson (S.W.D.)

A.B. Williams (S.W.D.)

M.E. Kain (S.W.D.)

Swimming Gala—H.M.S. 'Vernon' 1961

ONCE again I am pleased to report that *Deepwater* have taken the swimming trophy. The points, *Deepwater* 52, Ordnance 25, Maintenance 17, Willis and Sea Trials 7, Long Course 4. Our points were obtained from the following team.

Petty Officer Holland

Petty Officer Clark

Able Seaman White

Able Seaman Charwell

Able Seaman Wade

Able Seaman Vanderson

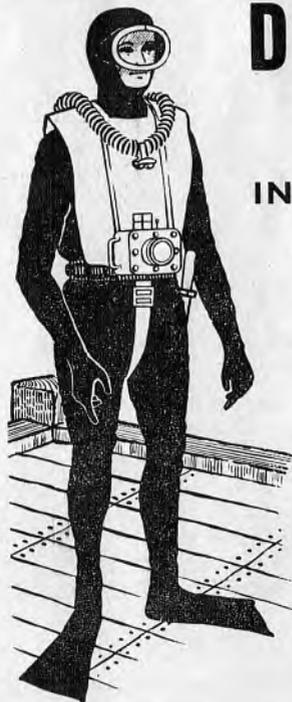
Leading Seaman Blaylock

Leading Seaman Brassington

Leading Seaman Davis

Leading Seaman Andrews

Leading Seaman Audoire



DEEP-DOWN COMFORT...

IN EQUIPMENT YOU CAN TRUST!

HERE IS ONE OF THE BEST SELECTIONS OF UNDERWATER EQUIPMENT—AND IT WILL PLEASE YOU, WHETHER YOU'RE AN AMATEUR OR THE KEENEST OF ENTHUSIASTS. YOU ARE INVITED TO LOOK AROUND ANY OF OUR BRANCHES, TAKE YOUR TIME, AND CHOOSE THE BEST

STOCKISTS OF ALL THE LEADING MANUFACTURERS
LUNGS, WET & DRY SUITS, GUNS, MASKS, FINN, ETC

Oswald Bailey

34 Commercial Road, Bournemouth

119 Above Bar, Southampton

52 London Road, North End, Portsmouth

181 High Street, Poole, Dorset

Moor Street, Birmingham 4

7 Shelton Square, Coventry

Tel. 22742

Tel. 22687

Tel. 60051

Tel. 495

Tel. MID 2474/5

Tel. Coventry 27304

Placings were:—

220 Yards.

100 Yards Butterfly.

100 Yards Backstroke.

220 Yards Breaststroke.

100 Yards Free style.

27 Yards Butterfly.

4 × 2 Medley Relay.

67 Yards Breaststroke.

67 Yards Backstroke.

6 × 2 Relay.

Leading Seaman Audoire—4th

Leading Seaman Brassington—2nd.

Leading Seaman Blaylock—1st
Petty Officer Holland—3rd.

Leading Seaman Andrews—2nd
Petty Officer Holland—3rd.

Able Seaman White—2nd.

Leading Seaman Wade—1st.

Leading Seaman Brassington—2nd.

Deepwater—1st.

Leading Seaman Wade—1st.

Petty Officer Holland—1st
Leading Seaman Blaylock—2nd.

Deepwater—1st.

Congratulations to them all.

CHIEF PETTY OFFICER MCKINLAY, *Sports Representative.*



'Film Making'

FATHOMS down in Gibraltar Bay is a Bomber which crashed on take off. On board is the body of Polish General Sykowski and his brief case, containing the plans of the impending Second FRONT. Lieutenant L. P. K. Crabb, R.N.V.R., and his newly formed diving team operating at Gibraltar have been ordered to recover the brief case at all costs. Italian Frogmen operating secretly from the interned merchant ship *Olterra* at Algercir and have been attacking Allied shipping in the Bay, observed the crash and the recovery attempt. Appreciated that something of importance must be in the aircraft they decide to investigate. At the very moment when Crabb has found the all important brief case, six black rubber covered swimmers appear out of the murk (to suitable music of course). A deadly underwater fight then takes place. Pairs of swimmers swirl and grapple in a macabre slow motion ballet with only death to the loser. Breathing tubes are cut and face masks are smashed. Italians die horrible deaths. Notari, the leader of the Italians discovers Crabb inside the aircraft with the brief case and another individual battle is joined for the all

important prize. Crabb, about to receive a knife thrust from Notari, is saved by the timely arrival (like the U.S. Cavalry) of his trusted friend Stoker Knowles.

The Italians have had enough by this time and Notari, counting the bodies of his negatively buoyant comrades, signals the retreat. Crabb and his victorious team rise slowly to the surface.

And so ends another scene in the Romulus film 'The Silent Enemy'.

Starring Laurence Harvey, Dawn Adams, John Clements and Michael Craig, not forgetting of course the Mediterranean Fleet Clearance Diving Team who were on temporary loan to the film company to do the underwater acting. The F.C.D.O. at the time, now I. Diving H.M.S. *Vernon*, doubling for Laurence Harvey and the team were good'ns or bad'ns depending on who could grow the longest sideboards. P.O. Clark played Notari. L.Seaman Carter played Stoker Knowles.

Film making is all jolly fine but it gets a bit wearing after two months. The above scene lasted four minutes on the screen. It took two weeks to shoot.

Rule of the Road

(Divers Only)

by 'B.F.'

If to your starboard there appear
A 'makey learn' complete with spear
You may proceed without concern
For he will miss you, way astern.

If a mermaid you have seen
Restrain all thoughts that are obscene
Unless you wish to dearly pay,
Give to her the right of way.

The diver equipped in Standard Gear
Cannot manoeuvre to keep clear,
Swimmers therefore give wide berth
To helmeted figures of great girth.

The same applies to Iron Clads
Those steel walled atmospheric cads,
Tis true their observation's good
But they can't sidestep as they should.

If in your facepiece there appear
A tiger shark with evil leer,
There's not so much for you to do
Though prayer may be of use to you.

The octopus is wont to gloat
At lone swimmers without float
His inky jet he will discharge
The swimmers course to camouflage.

When head on meeting with a whale
A sense of caution should prevail,
Jonah's fate may be expected
For those whose course is not corrected.

The diver prone to 'Oxy Pete'
Must ne'er consume his O₂ neat,
He must dilute with inert gas
If O₂ limit he must pass.

'Niuro Narks', another threat
With resolution must be met,
Self control must be exerted,
Arrest for drunkenness averted.

When diving with the greatest ease
Beware the evil known as 'Squeeze',
The choice is merely don't go fast
Or join the ranks of them that's 'passed'.

In danger with not time to wait
Close all valves and suit inflate,
Exhale while rising, it is proper
If gas wants venting, just don't stop her.

Divers' Employment Bureau

The Bureau continues to function, and if you wish your name to be recorded please forward the undermentioned to the Employment Bureau.

Applicants must be either serving R.N. Divers or Ex-R.N. Divers who are subscribers to the *Diving Magazine*.

Full Name

Rating..... Off. No..... Age.....

Time Expired or Expires.....

Private Address

Willing to Serve Abroad.....

Diving Rate..... Date and Place Qualified.....

Equipment Experienced in.....

Diving Experience.....

This information will be filed and referred to as and when diving employment is required. The Bureau does not assure you of a job, but it will advise applicants on vacant diving situations.



Zodiac *Sea Wolf*

Photo: Serge de Saix, Paris

The Underwater Explorer's Watch

The Zodiac Sea Wolf is the world's finest selfwinding super waterproof watch developed especially for the diver. Featuring a handsome dial for better underwater visibility and a movable bezel with fine calibration to five minute intervals, the Sea Wolf has been approved by Commander Cousteau.

Tested to an undersea depth of 660 feet it is more than ever the skin diver's most dependable watch. Its accurate 17 jewel movement is shock-protected and antimagnetic.

Used by all who require a rugged and reliable timepiece the Zodiac Sea Wolf will give everlasting service under the most demanding conditions. Stainless steel case and band. Available with black or white dial.



Zodiac *the name for automatic watches*



Available from leading Jewellers and Sub-Aqua Specialists throughout the United Kingdom

In case of difficulty please apply to:

PRESCOTT CLOCK & WATCH CO. LTD. 18 Holborn Viaduct, LONDON, E.C.1 www.mcdon.org.uk