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Vol. 6

H.M.S. VERNON

No 3

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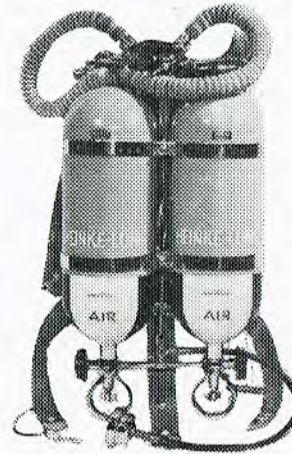
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R.N. Diving Magazine

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Vol 6

October, 1958

No. 3

A Short History of Diving as applied to H.M.S. Reclaim

EXCEPT for those intimately connected with it, diving has been in the past a black art discussed by its enthusiasts behind closed doors. The time has now come when one can buy a complete set of diving equipment from a sports shop and, with very little knowledge, jump off the end of the pier and have a reasonable chance of living to tell the tale. It was thought appropriate to discuss the advances in theoretical knowledge of the dangers involved in diving and of the work constantly going on to cut down the risks and to improve equipment.

H.M.S. *Reclaim* has done her share in this process, as is shown by her two world-records—one of which she broke a second time — obtained in the course of normal experimental diving in her relatively short life. These experiments have been the practical work suggested by theories developed from laboratory work on animals and volunteers. The purpose might be expressed as the 'need to put the body at pressure other than atmospheric and return it to normal conditions as safely as possible'; and leads naturally to the need to 'determine what happens to the body

under pressure.' The need arises from many walks of life — tunnel builders, salvage workers to whom time is money; therefore, a long time returning to normal conditions for a short time on the job must be avoided unless it can be shown to be essential. Basic knowledge of this kind has a practical use in the reverse sense, such as in polar passenger flights and space travel. The passengers of the *Comet* that crashed off Elba in 1953 were subjected to a very rapid decompression when the pressurisation failed.

In the course of the work for which *Reclaim* was designed, trials have been done to find out the advantages and disadvantages of many types of diving apparatus, from breathing sets to underwater cutters, as well as the compositions of breathing gases and mixtures; but before going into these there follows an outline of the physiological side of diving. It is important to realise that for every 33 feet a diver descends, the water adds a pressure of another 15 lb per square inch over the whole body of the diver and in any body space in communication with the skin, such as the throat, lungs, nose and

sinuses. A whale is created to withstand pressure changes like this, but a human is not and reacts in a different way. As the pressure increases, the nitrogen of the air is forced into solution in the blood going through the lungs. The longer the diver is under pressure the greater the amount of nitrogen absorbed. If this pressure is decreased too quickly bubbles of nitrogen will form in the body, as the blood-flow to the lungs is not fast enough to release the gas in the normal way — c.f. a soda siphon when the pressure is released. The commonest place for these bubbles to form is around a joint, which then stiffens in a bent, painful position, and so the illness due to this cause is called BENDS or Decompression Sickness. If the bubbles were formed in the veins, the blood would carry them to the heart and churn them up causing a lack of blood to the lungs and thus a lack of oxygen to the body. The consequent feeling of suffocation is called the CHOKES. If the nitrogen and other gases reached the lungs but could not escape, e.g. because the breath was being held, the pressure could build up high enough to give BURST LUNG. If the resulting tear in the lung happened to be into a blood vessel, the bubble could travel anywhere in the body, perhaps the brain, and give the same effect as a stroke. A SQUEEZE occurs if the pressure of the gases being breathed by the diver is much less than the surrounding water. This ailment can be compared to a bear-hug, the seriousness increasing with the difference in pressure.

The first real attempt to beat these problems was made by Paul Bert, of France, in 1878, and his principles were developed in Britain by an Admiralty committee in 1906 which had the services of Leonard Hill and

J. B. Haldane and many others. In 1908 the Haldane Tables were published.

Tables are schedules of the times that must be spent at fixed depths to allow nitrogen to leave the body safely and these times and depths — known as 'stops' — vary with the depth and time spent under pressure before starting to return to the surface. In 1935, Hawkins and his colleagues in the U.S.A. altered the tables, as it was known that on some schedules the stops were unnecessarily safe and on others were unjustifiably risky. However, the price of progress was THE NARKS, otherwise Nitrogen Narcosis. It was found that the deeper and longer the dive, the more liable nitrogen was to make the diver behave and feel as if he had had too much alcohol to drink, until sometimes unconsciousness occurred. This condition was combatted by using an oxy-helium mixture instead of air — which is after all an oxy-nitrogen mixture. Helium when breathed gives a feeling of intense cold but no narcotic effect, and it was with this mixture that the U.S.A. achieved a world-deep-diving record of 440 feet in 1938.

Two other problems should be mentioned. One is how long should a diver have between dives and the other is how to carry out the decompression if for some reason the diver has to come out of the water before completing his stops. This latter problem — known as Surface Decompression — entails the ascent of the diver to the surface, his transfer to a compression chamber, and his subsequent recompression and decompression, without risks. During the 1939–45 war, the use of self-contained equipment expanded enormously in diving; this also brought its own problems but it is not *Reclaim's* task to do more than help to find the

answers. However, oxygen-poisoning did become a problem for the standard diver in that as he went deeper, he required to keep him alive a percentage of oxygen lower than in the normal atmosphere. This poisoning in extreme cases takes the form of an epileptic fit. Occasionally, some other contaminants of the breathing-mixture — such as carbon monoxide and smoke — give trouble but are easily dealt with by proper care. Carbon dioxide may build up in the very deep dives, where the gases are recirculated, if the CO₂ absorbant is not efficient; again proper care will avoid this.

That very briefly gives an idea of some of the diver's troubles, and it is now a convenient moment in the development to introduce H.M.S. *Reclaim*. She was commissioned in 1948 for deep-diving trials and training. The vital thing about her is the location of the diving flat — beneath the well deck — and its being fitted with two large ship's-side doors that open inboard. The diving flat is spacious, well laid out and has every facility available including supply lines for air, for oxygen and for helium. There is a recompression chamber (the R.C.C. to divers), and control panels which can handle up to a maximum of eight divers at any one time. The diver is dressed in the flat and in a few paces is out over the ship's side and into the water. When he carries 1½cwt of gear for standard diving, or over 2 cwt for deep diving, this facility is essential. The recompression chamber has three compartments, and in the R.N. only *Reclaim* and *Kingfisher* have this type. The advantage of three compartments is that two divers can be decompressed separately at the same time, and that should they need assistance, the doctor can, by means of the air-

locks, enter either. Its convenient position means that the dangers of surface decompression are minimised as without any undue hurry a diver can be under pressure inside the chamber within a minute of breaking surface. Should a diver suffer from bends, chokes or burst lungs, the chamber is large enough for him to be treated. This treatment may last nine hours or much longer and an attendant has to be with the patient the whole time. The size of the chamber enables them to eat, lie down, have limited movement, and sanitary facilities. The treatment is almost as unpleasant as the injury.

Reclaim also carries two submersible Decompression Chambers (S.D.C's) in a hold just forward of the diving flat. These are of use in diving to depths greater than 180 feet because then the diver's stops on the way to the surface are very long at the shallower depths. The S.D.C. works on the principle of a diving bell and is lowered to 60 feet. The diver enters it through a door in the bottom and once he is inside the S.D.C., the attendant, who is waiting for him, removes his weights and helmet. The air pipe and breastrope are dropped out and the lower door closed. The S.D.C. may now be hoisted on to the deck and the decompression continued by venting the air inside the S.D.C. This routine saves the diver the long relatively motionless period in cold water, and he can be supplied with oxygen from a self-contained set to breathe, which cuts down the time required to decompress him. The two men inside are very cramped and are not in a position to receive any help from the outside; however, at the level of 30 feet, surface decompression routine may be used to transfer them to the more comfortable R.C.C. though the



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finest tobacco
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routine is riskier than usual under these circumstances.

Another item that *Reclaim* carries is an Observation Chamber which has been tested down to 1,500 feet and used in a manned dive down to 1,060 feet. The chamber is no more than a tube fitted with a watertight hatch on top and glass observation ports fitted to the upper end. Being sealed the diver is always at atmospheric pressure and so avoids many of the risks. Should the chamber recovery wire become fouled, it is possible to blow the chamber water-ballast by means of the chamber's own air bottles and so allow it to come to the surface. Other facilities onboard *Reclaim* include a very good workshop, and excellent small sickbay equipped to analyse the gas mixtures being used, and underwater television for wreck classification. The television is tested to 1,200 feet and can be used on wrecks found with the asdics.

The activities of *Reclaim* have progressed diving in three ways: firstly from a strictly medical aspect, secondly from the routine and equipment angle, and thirdly from the training of deep divers.

First let us consider the medical aspect. In standard diving, the oxy-helium routines of the U.S.A. were slightly modified, and trials were organised in 1948 of the amended oxy-helium tables. The world's deep-diving record was broken twice in reaching 535 feet. However, trials were not entirely satisfactory and it was decided that an attempt be made to develop new tables on the new and more up-to-date information available, and that research be instituted into the basic facts. To this end, long exposure trials, e.g. keeping men for up to 12 hours at 30 feet and immediately bringing them to the

surface, started the investigations in to what exactly happens to nitrogen in the body. Coupled with many animal experiments this led to trials of new tables in 1954. However, though these were not successful, they provided much useful information on which Rashbass developed a further set of tables. These were tested in the 'dry pot', i.e. in an ordinary compression chamber as distinct from the 'wet pot' which is a chamber almost filled with water to which pressure can be applied. The trials were successful but when repeated at sea proved very disappointing. This was not an isolated instance of dry-pot results not being borne out by sea experience. The body appears to behave differently in the open sea—perhaps due to tides, cold, etc.—so an actual diver must ultimately be used to give reliable data. The development of theories, coupled with practical experience, led to oxy-helium diving in 1956 with the object of reaching 600 feet by the new tables. This was achieved and work started on filling in all the other gaps. It is worth mentioning that before subjecting human beings to the practical dives, goats were used because they are animals which behave most like man under pressure and are not normally affected by physiological considerations such as fear. They, as well as cats, are commonly used at the Royal Naval Physiological Laboratory, for experiments on the brain. In the filling-in work, occasional trouble was encountered and this was traced to the quite unsuspected fact that nitrogen left the body at a much lower rate than it went in; however, the effects of this were so minor for practical purposes that new diving tables are now being produced, ten years after the original requirement. The problems mentioned earlier, of

the time interval between dives, and how one uses surface decompression, have not been completely solved on these theories and obviously the basic facts are not all known. The next steps will mean straightening out these difficulties, and defeating the problems of nitrogen narcosis for highly skilled work down to 180 feet. It has been found that some people are more prone to this pseudo-drunken effect at shallower depths than others, perhaps even some on the surface.

That is the story from the medical point of view, but there was one series of trials which dealt with both activities. That was when *Reclaim* did tests to determine the effects of underwater blast on divers.

Early trials were done ashore using goats as divers, and *Reclaim* came into the picture when the tests were repeated using humans. Thirteen volunteers were chosen for trials at Spithead. Various-sized charges were used and for each explosion six divers were down. The trials were successful inasmuch as the theoretical figures were borne out.

In fulfilling her second purpose, *Reclaim* has constantly been testing all forms of underwater equipment, both diver's dress and the tools he uses. Mercury vapour and sodium vapour lamps have been tested without much success and the diving world has reverted to the ordinary tungsten electric lamp. The *M2*, sunk in West Bay, Portland, was used as a guinea-pig for the trials of different sorts of oxy-arc underwater-cutting torches, and as a result lost one propellor which was cut off although never brought to the surface.

In 1951, a Squaler type submarine rescue bell was obtained from the

United States and *Reclaim* was responsible for the initial trials. A simulated submarine hatch was built and trials were done on this hatch, and, later, on a submarine — both under deep and strong tidal conditions. The conclusion was that depths of up to 300 feet made little difference to the utility of the bell and that it could be secured to a submarine listed up to 30 degrees in a maximum current of 3 knots. When *Kingfisher* was converted she was given the bell although *Reclaim* is still fitted to embark it. Only a few submarines are equipped to receive the bell and the free-ascent method has taken its place. In the submarine rescue field *Reclaim* is well known for the part that she played in the *Affray* tragedy and for being the only ship fitted with underwater television. This is still carried in an improved form. When the *Truculent* was lost, *Reclaim* was refitting but sent her divers to the disaster.

After the war the Royal Navy did not possess a satisfactory observation chamber; thus one was made and, in 1956, was supplied to *Reclaim* for trials. (These have just been completed.) The chamber has been down to 1,060 feet in a manned dive, and would be most useful for deep salvage operations, the way in which civilian firms tackle a deep job. Unfortunately, *Reclaim* is not at the moment capable of working the chamber in conjunction with a worthwhile grab. There is a lot of work that could be done in the future using the chamber, grabs, and explosives for salvage, and for developing the technique for this type of work in the Navy. At present the Navy is a child in this field.

The above have been some of the major hardware trials that have been

attempted but continual minor trials are always being done, and of course no detailed mention has been made of the trials of diving equipment that have been done for the Clearance Diving Branch. *Reclaim* is always glad to work for the C.D's as it does bring the two diving branches of the Navy closer together, and from the C.D. viewpoint *Reclaim* is the ideal ship to use because of her unique facilities.

As regards deep-diving training, *Reclaim* has qualified one hundred and seven deep divers including eleven from foreign and Commonwealth navies. Each course has to do about six weeks' practical training in the ship.

In the future, there is a lot of medical research to be done particularly in improving the safety of surface decompression. If the diver could be brought inboard without

his wasting precious gas in his stops and with only a small risk of a bend, the endurance of his set would be more economically used. Furthermore, the diver could be briefed in the comparative comfort of an R.C.C. whilst his impressions are still vivid. The technique of handling the observation chamber in conjunction with the grabs and explosives must be developed. To do this satisfactorily, it is felt that alterations to the ship's gear may possibly be necessary.

A new equipment known as Transfer Under Pressure is to be installed in the 1958 refit. This is simply a new R.C.C., to be fitted forward of the diving flat, which is capable of having an S.D.C. shipped on to it; the pressure in the R.C.C. is then raised to that of the S.D.C. and allows the diver to transfer from S.D.C. to R.C.C. whilst still under pressure. His gear and the S.D.C. are then available for further use.



'No Deeps you Jeeps'

Toby Gets Stuck

I was always the first one to man the boat on diving days. Well — most times anyway. This ensured the boat was in position, the pumps were uncovered, the air-hose was rigged and the few minor jobs that would allow diving to commence without delay had been done. This helped the monthly dippers to get away by seven bells in the forenoon.

It was on one such day that we in the Diving School were told to expect six monthly dippers, apart from the class of divers qualifying who were part of the daily routine. Preparations were well ahead when the clomp of boots on the steel deck of the floating pontoon told me they had arrived. "Morning all," I called as they clambered into the boat, and, "Morning Chief," was the chorus in reply. Then came the clomp-clomp of the boots of a straggler.

"Morning Toby," I called as I looked up and recognised who it was.

"Morning you," was his good natured reply quickly adding "I'm down here for the day!"

"Ho then," said I "in that case I'll fit you in for a dip after dinner with the Divers Qualifying. I'm giving the monthly dippers signal exercises this forenoon, and final instructions before leaving the surface will be: when you get to the bottom, give the signal for a slate and pencil, sketch the object which will be attached to it, and give five bells when you've finished." Toby nodded his approval, so I continued, "Will you look out for the fore-end of the boat? Usual drill," I called as he made his way forward round the canopy.

Then I turned my attention to the divers at my end of the boat and

noticed that the first diver was almost ready for the ladder; and so we passed the forenoon away.

That afternoon the after-end of the boat only was to be used by the Divers Q class, and each one would be given the task of cutting through a link of a forged chain with a hammer and cold chisel. To do this the diver had to heave the $\frac{1}{2}$ cwt sinker of the shot-rope out of the mud, place it between his knees and use it as his bench in cutting the chosen link. The average time taken was about five minutes; Toby, however, could always cut his links in two minutes, and many were the conjectures as to how he did it. This feat of skill did not do him much good on this particular occasion, for as soon as he had signalled 'Job completed', it was decided to exercise him in direction signa's.

We sent him out to the end of his distance line, then left, then right and let him rest. My watch showed it was just coming up to 3 p.m. so I told the attendant to give him ten minutes' rest then call him to the surface. Meanwhile, I got out the 'ticklers' and rolled one.

"Right! call the diver to the surface," I ordered as soon as the time was up. The attendant repeated the order and tried to make the signal. Noticing his difficulty I asked him what was wrong.

"It don't seem right Chief, it seems as if something heavy is lying across the breast-rope," was the reply. Together we managed to haul in two or three feet of the breast-rope when Toby himself supplied the answer by signalling 'Diver foul, require the assistance of another diver'. I decided to investigate the situation and in a matter of minutes

I was descending on Toby's breast-rope. As we were diving in only 2 fathoms the cause of the trouble was soon apparent. With the falling of the tide, the 3 in. securing cable of the pontoon had settled over the top of Toby's air-line and breast-rope. Each link of the cable weighed about 70 lbs, and in the soft mud bottom it was more than the two of us could do to lift the cable high enough for Toby to crawl under. Putting my helmet close to his, I told Toby it meant digging him out.

"What made you go under the cable?" I asked.

"Well,?" replied Toby, "I generally use the cable as an anvil when I have a link to cut, and when I got the direction signals I forgot to go over the top of the cable, as taught."

"Well, you keep here while I fetch a couple of shovels".

"Keep here?" queried the astounded Toby, but I lost the rest of the sentence as the pump had started heaving.

I did not wish to upset him further, so on my return with the shovels I placed one in his hand and left the rest to him.

We soon realised the futility of our task. The deeper we dug, the deeper into the mud sank the cable under its own weight, and what was soft mud turned into more like pea soup. I was up to the waist in it myself. After another short conference we agreed that the only course left was to wait for the tide to rise and lift the chain.

"Alright, then," I said, "I'm going up for a cup of tea. You stay here like a good boy", and this time

made my getaway before I could hear the spluttered remarks of poor trapped Toby.

The pumps crew were not at all pleased at the news but, after a short summing up of the nature of tides and tideways, they were consoled by the fact that it was the last half-hour of the falling tide that had trapped the diver. This meant the first flood of the tide would raise the pontoon enough to free him.

It is said 'a watched kettle never boils,' and I could add another saying, 'a watched tide never rises'! One of the crew took occasional soundings, another took a walk along to the end of the pontoon to see if the water rose above a mark he had scratched on one of the piles. I noticed also that the attendant kept the breast-rope taut ready for the first signs that it was free.

Toby was the first one to realise he was free, and the sudden report "Diver asks to come to the surface" was sweet music to our ears. He was very soon inboard suffering the comments of the crew. I turned to him as he was helping to get his boots off.

"Alright, Toby?"

"Yeah, alright I suppose," was the reply. Then after a moment's pause and a deep breath, he fixed me with a baleful eye.

"You know something, Chief?" he began slowly, "When I leave the service I'm going to write a book". A slight pause and then "and I'll give it the title — *Ships I've been in*," (and with a glance all round, and a raised voice) "and blighters I've served with". J. W. SCOTER.



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ANNUAL DINNER

THE 1958 Annual Dinner will be held on Friday 12th December 1958. As in previous years it will be open to all Service divers, A.E.D.U., and R.N.P.L. personnel.

2. The dinner will be held in the Kimbells Corner House, opposite the Theatre Royal, near the Guildhall, Portsmouth.

Routine as in previous years:—

- (a) 1800-1830—
'Warm up' in Yorkshire Grey.
- (b) 1830-1900—
'Turn on to mixture with boosted cocktails'.
- (c) 1900-2030—Dinner.
2030—
Tissue saturation and narcosis experiments'.
0001—
'Complete all decompression and eject divers from the Chamber'!

3. Cost will be 30/- per head. This will include drinks before and during dinner, the dinner itself, hire of hall, menus, etc. Drinks after dinner will be 'on' the 30/- until stocks are expended after which all proceed under 'own steam'.

4. **BOOKINGS.** To enable planning to proceed with catering, etc., bookings should be made as early as possible. Subscriptions should be forwarded to:—

Lt Cdr. W. B. Filer, R.N.,
c/o Admiralty Experimental
Diving Unit, H.M.S. *Vernon*.

Team Officers-in-Charge are requested to collect the requirements of their teams. Receipts will be forwarded as confirmation of the bookings.

5. Roll up and ensure the continued success of this, your own, Annual Dinner.

The Devil's Cauldron

OUR course lay at right angles to the coast, with the 'port' of Banana as our objective. Here we were to embark a pilot before proceeding up the River Congo. The nearer we came to the mouth of the river, the darker brown became the water, with ever-increasing amounts of driftwood, weeds, and refuse of all kinds being carried past us on the turbid waters. Here let it be noted that the flow of the Congo runs for a very considerable distance out to sea.

Arriving off Banana, a small collection of huts surrounding a minute jetty, we awaited the arrival of the pilot, who eventually came out to join us in a very smart launch. Of local origin (he was an obvious believer in sunbathing, being poss-

essed of a beautiful tan) he wore a peaked cap, set at a very jaunty angle, navy blue woollen roll neck sweater, khaki trousers and white canvas shoes. Possessed of a huge grin displaying gleaming white teeth, his English vocabulary consisted of some half dozen words. So much for our pilot.

Whether he would be of any assistance to our captain during the trip up river remained to be seen. Having seen his launch safely clear, we began to move into the Congo river proper, with the upper deck and fo'c'sle crowded with curious members of the crew, all trying to look both sides at one and the same time in order not to miss anything of interest.

A notable point of comment was the large number of whirlpools of varying sizes, from some two or three feet to close on a 100 yards across. Although swirling around at considerable speed, they appeared to be more or less 'surface' pools (if one may use the description). The whole width of the river from bank to bank, was a seething mass of them; with islands of waterlogged trees, weeds, flotsam of all kinds, interspersed amongst them. A current, which in places ran at almost eleven knots, was a further hazard to the safe navigation of the ship; and one felt some sympathy with the captain on noticing that the pilot's assistance was rendered in the shape of nods, grunts, waves of the hand and an occasional shrug of the shoulders, in answer to a question. Albeit, the huge smile was always most prominent.

Apart from the strained look on the face of the navigating officer (who swore that the chart of the river *must* have been drawn and *published* by Danny Kaye and the Andrew Sisters to help publicise their song 'Bongo, bongo, bongo, I don't want to leave the Congo'), the rest of the bridge personnel appeared to be enjoying the trip — with the possible exception of the ship's coxswain on the wheel. He was muttering imprecations, twenty to the dozen, at every wheel order; and these were coming quite frequently. For, apart from the 'islands' and tricky waters, we were having to dodge many huge trees which were borne swiftly downstream on the fast running current. One could almost feel the stoppage of breath amongst the crew as a further large menacing tree came hurtling towards us, to be avoided — at what always appeared to be the last possible moment by quick wheel orders to the unhappy

cox'n. He, poor man, was perspiring most freely under the trials and tribulations of this — what was obviously going to be a very protracted-ordeal.

A glazed agonising look in his eyes, muscles rippling like a bee's kneecaps doing the mambo, he forcibly expressed his opinion of the parentless, farmyard character who first had the bright idea of even allowing ships to attempt this trip; freely confirming that he would like nothing better than to have the said character here on the wheel, under his (the cox'n's) personal supervision.

As this was acknowledged as being a most permissible 'drip' under the circumstances, no one paid much attention to his diatribe, being far too busily engaged in observing the passing scene; this being quite contrary to our expectations. We had become so accustomed to the thick bush and jungle in so many places and rivers already visited up and down the west coast, that the present scenery was a most pleasing and delightful surprise.

The banks of the river were a lovely lush green for quite a way up river, and hills similar to our own Cotswolds dominated the scene. Added to this, a light breeze (for it was early in the forenoon) made for a most pleasant trip. Or so we fondly imagined. After previous experiences we should have realised that heat, and a very sticky heat at that, is the usual thing found in these areas.

After some two or three hours steaming, we began to notice huge barriers built of logs in various parts of the river, mainly near to the banks. Stretching out for some distance across the river, they were covered with nets for their whole length. These were native fish traps which

can be seen only on the lower reaches of the river.

Passing close to one of them in our tortuous progress up river, we saw a number of canoes secured to the barrier, with the natives ranged along the horizontal logs, hauling in the great nets. A stalwart 'choir master', perched well away from the working party, gave them the down-beat for a Congo rock 'n' roll song of weird cadence, to which they all gave full throated rendering, giving a mighty heave on the nets after every chorus. As the net was hauled slowly up, other natives standing in the canoes grabbed the fish from the mesh. With each fresh 'big one' caught, a loud roar of approval went up from the straining net men. With such a swift-flowing current, there would be obviously little hope for anyone who had the misfortune to fall into the water; and we were later informed by a local resident that the death rate due to accidents of that nature was quite high. Something in the nature of an occupational hazard.

After some hours of steaming we finally sighted Boma and moored alongside for the night. This gave us the opportunity to make the rounds, sample the local brew, etc., which gave rise to some most peculiar headaches and multi-coloured eyeballs the following morning. A visit to the local cinema, where an ancient French film was being shown, occupied the more sedate members of our party for the evening. Assisted by the usual naval commentary, the film was acknowledged to be reasonable for a foreign effort. Expert observations were made by our resident Romeo on the shapely superstructure of the heroine, with subsidiary remarks regarding the would-be hero and his lack of the 'the man-like' approach to his subject

A gloriously colourful dawn saw us slipping away up river on our way to Matardik, Belgian Congo. An air of expectancy filled the ship now, for we had all heard of the dreaded 'Devil's Cauldron', through which we had to pass before reaching our destination. Making steady progress through more of the same type of hazards as previously encountered, we began to head in towards the left bank, through a channel worn by the river between a number of larger 'islands'.

A steep rocky slope, continuing ahead of us along our port hand, became more and more cliff-like in aspect as we progressed, and it appeared as if the river disappeared into the cliff. It was some little time before we realised that the river made almost a 90 degree turn to the right.

At this juncture was the cauldron.

As we drew nearer, a sullen moaning noise could be heard, and a distinct silence fell on board. The voice of the captain on the bridge could be heard giving orders, with the Cox'n's acknowledgments clearly audible.

A hushed crowd on the fo'c'sle gazed intently at the approaching cliff, which now rose sheer from the water, and ranged across our bows — to continue high and forbidding, over on the starboard side ahead, following the river. All round the ship, the water seethed, roared and bubbled in a most alarming manner, black and menacing as it swirled in swift circles. This was the outer edge of the dreaded Cauldron.

Uneasy glances were exchanged, and not a few looked up to the bridge as if to gain confidence in the sight of the captain, who appeared to be not at all impressed by the forbidding circumstances of the moment.

The moan had now increased to a veritable roaring. Fascinated, we all gazed at the huge whirlpool — swirling round at terrific speed, forming a huge funnel in the dark ugly surface of the Congo. Our bows were now well inside the outer edge of the fast-moving circles, and the cliff loomed perilously close ahead. Anxious queries were passed back and forth, as the order 'Starboard thirty' had been clearly heard given and acknowledged; it was common knowledge that the engines were giving maximum revolutions, and had been for some time.

Yet the power of our engines, and the effect of full rudder, seemed to have no effect at all on the ship; she was being thrust nearer to the cliff by the force of the mighty whirlpool every moment. It seemed we could not possibly escape crashing into it—we were having to crane our necks now to look up the cliff face, so near was the ship.

Some of the crew began moving aft, and there was a crack from one chap about 'bearing-off spars' being required. Suddenly, the bow began

swinging quickly to starboard, further into the Cauldron — and our forward speed increased significantly. A swift helm order corrected the swing, and seconds later we were through — leaving the murderous looking funnel of the whirlpool behind.

A concerted sigh of relief went up from all hands, and the straining look disappeared from the face of the cox'n, who, later in his own description of his ordeal, explained that he really sweated blood and didn't realise that he was possessed of such powerful muscles. Some two miles ahead on the starboard hand was Matardi, our next port of call—and an obvious place in which to 'clear the system' of the nightmarish experience we had just been through.

We were clear of the dreaded 'Devil's Cauldron' — we had made it, nothing to worry about really. Or was there? Surely, this was one stretch of water where it was safe to quote the old Patagonian proverb: *Tarry not, lest ye loiter.*

SIR HOOK.

DEEP DIVING AT WOOKEY HOLE

An Account of Exploration by the Cave Diving Group

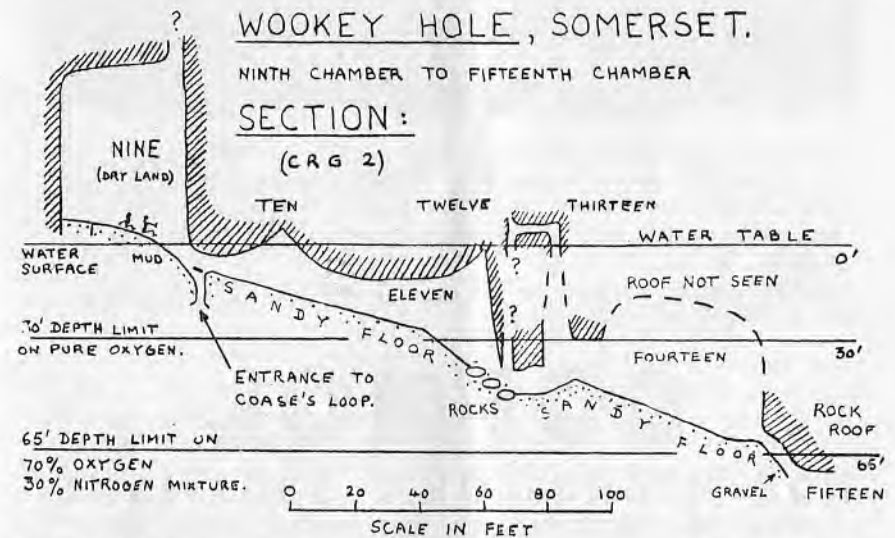
THIS article describes the discovery of a fourteenth and a fifteenth chamber at Wookey Hole by members of the Cave Diving Group. The new chambers lie still deeper below the water table than the parts of the cave already explored but, nevertheless, there is still a slight chance that we shall reach dry land within a practicable distance. Also, a skeleton and the remains of a necklace have been unearthed from under water in the fourth chamber, and at a point

several yards upstream from all the earlier finds, so that it is now fairly certain that this place was used as a burial chamber in the remote past. But to return to our subject—

In December 1955, when Professor R. E. Davies using an aqualung, discovered the twelfth and thirteenth chambers, he set in motion once again the exploration that had been static ever since Graham Balcombe and Don Coase had discovered the eleventh chamber in 1949, using oxygen. Davies had planned his

dive carefully but to his bad luck things went wrong and he found himself in a situation where he was obliged to swim upstream over unknown territory looking for an air surface in which he could save himself. He remained there for several hours before carrying out his carefully calculated and brilliantly executed escape bid. We were filled with high hopes for continuing with

were obliged to play a waiting game while we quietly collected together all the necessary bits and pieces and carried out practice dives in safe water. This continued until Easter 1957 when we felt confident to dive in a cave and explored Hurtle Pot in Yorkshire to a depth of fifty feet along a bedding plane. This was in a small way an historic occasion since it was the first recorded use of



- NB. (1) THESE CHAMBERS RUN FROM WEST TO EAST.
(2) THIRTEEN AIRSURFACE IS INCOMPLETELY EXPLORED.

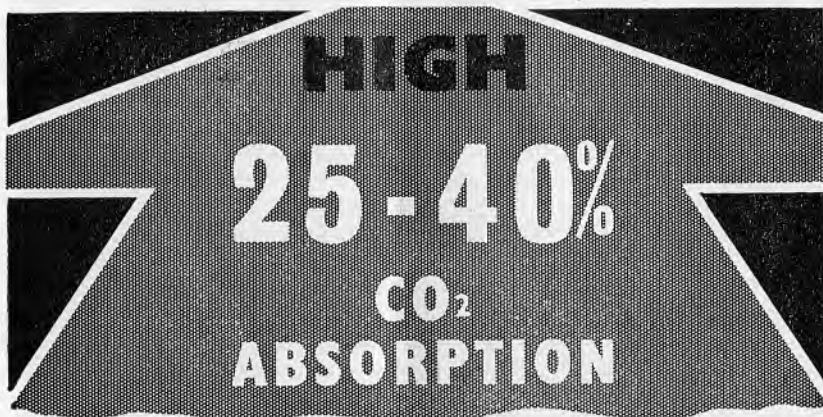
COPYRIGHT CAVE DIVING GROUP
26 3 58 *Or Wells*

the exploration straight away but our plans were not made easier when Bob Davies departed to America, leaving only two divers keen enough and capable of continuing with the work.

We were advised by Graham Balcombe to use mixture-breathing apparatus and to wear boots on our feet but in view of the fact that neither John Buxton nor myself were familiar at that time with the subtleties of this type of apparatus we

mixture-breathing apparatus in a cave.

After a few more dives we felt confident to have a shot at Wookey but before I describe this perhaps a few words about the apparatus would not be out of place. In the closed circuit apparatus the diver breathes pure oxygen. If he wishes to go below 30 feet, however, pure oxygen is no longer safe because of the danger of oxygen poisoning, and a percentage of nitrogen must be included in



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the breathing mixture. Various methods have been suggested for using the closed circuit apparatus with nitrogen in order to dive below 30 feet and it is quite probably that these methods would succeed nine times out of ten. However, it is in order to avoid this unfortunate tenth occasion that the principle of mixture-breathing is called upon, and the cylinders are filled with a mixture of oxygen and nitrogen. The percentage of this nitrogen must be controlled within fine limits (analyst's certificate) and the correct functioning of the constant mass reducer valve is vital for the safety of the diver. It is recognized that this type of equipment is very complicated and difficult to use, but then at Wookey Hole we believe it to be necessary since we are frightened by the short duration of the aqualung, especially if the diver has to exert himself under water or to remain at depths greater than 30 feet for an appreciable part of the time.

The equipment we finally decided to use was a modified form of the wartime 'P-Party' set, in which the soda-lime canister was replaced by a larger unit, and an extra cylinder of oxygen was added to be used on the first stage of the journey between the third and ninth chambers where the water is everywhere less than 30 feet deep. Our supplies of mixture were to be conserved for use in the chambers upstream from eleven, but in fact we decided that the change-over to mixture should be made on dry land in nine, since it is not advisable to alter the mode of operation under water except in an emergency. It is a pleasure to be able to record our indebtedness to Sir Robert Davies in this matter, not only for placing these kits at the disposal of Graham Balcombe and the Cave Diving Group in the first

instance, but also for supplying us with the further spare parts that we needed and for arranging the overhaul of our reducer valves. We are also indebted to the naval divers who assisted us during the period of our training.

The exploration of the cave was resumed in September 1957 and resulted in the discovery of the fourteenth chamber. We found that the thirteenth chamber, in which Bob Davies had been so fortunate as to have found air and dry land, lay at the top of a chimney running upwards from the roof of a deeper chamber (the fourteenth), and that the sandy floor of this deeper chamber lay at a depth between 40 and 50 feet below the water table. We walked across this sandy floor, a distance of perhaps 60 feet, and reported that the way ahead lay in a passage measuring 10 feet wide by 3 feet high and sloping downwards slightly at a depth of 50 feet. At the further point reached we deposited a piece of lead upon the floor, tied to the end of a thick rubberised cable that had been paid out to us as we advanced. This cable has become our permanent handline into the fourteenth chamber and from the length of this cable (220 feet) we are able to estimate that the length of the fourteenth chamber is about 60 feet as stated above.

We returned to this place on 14.3.58 and once again crossed over to the far side. We had expected to find that the way ahead was large enough to enter quite easily but to our surprise we found that I had exaggerated in the wrong direction and that the height of the passage was only 2 feet or so and consequently it was too tight to enter. However, by moving over to the right we found a place where there was a hollow in the roof and it was possible

to crawl in. (The line will need a first-class belay at this point.) The passage continued quite small for about 10 feet until my two depth-gauges gave readings of 60 and 65 feet, and I realised that we had reached maximum depth with the mixture we were using (70% oxygen/30% nitrogen). Looking downwards I could see the passage opening out again into the fifteenth chamber and I estimated that the roof of this chamber lay at a depth of 70 feet. The floor was not visible but this does not mean very much since the visibility was only about 20 feet and I was looking down at an angle through puffs of muddy water moving slowly with the current. I calculated that to pass the point that we reached would require a gas mixture less rich in oxygen than 70% and that a foolproof system of belaying the handline would be required through the slot. Meanwhile John Buxton had remained at his post at the entrance to the tight part, and I returned to him before belaying my line to a second lead weight and returning along the uphill passage to nine. There are no constrictions in the passage between fourteen and nine and the way is dead straight. During the return journey the visibility is reduced to 3 feet but it is remarkable how soon a diver is able to tell his position in the cave from the gradient of the floor, the occasional boulder, and the odd piece of rock which looms up from time to time out of the murk. One of the greatest dangers that can occur to a diver in such circumstances is that he should become buoyant, and we moved very

slowly because my dress was venting only very sluggishly.

In spite of this still greater increase in the depth of Wookey Hole, we believe that there is still a small chance of eventually discovering a dry cave, and when we have made all the necessary preparations we hope that we shall be able to enter and to explore the fifteenth chamber. The underwater distances between the third and fifteenth chambers is already considerable, however (700 feet), and it would be foolish to expect that we shall be able to press on straight away. The Cave Diving Group is in the process of buying another batch of surplus Admiralty diving equipment and some of these items will need to be incorporated in our kit if we are to dive deeper. We are planning to standardise on two different types of mixture cylinder to contain the different concentrations of oxygen. We shall retain our 70% oxygen mixture in the present cylinders and probably fill the new cylinders with 50% oxygen/50% nitrogen mixture. This will be safe down to 100 feet. But first of all we must get the stuff tested and overhauled by the manufacturers. Taking into account the additional time required to carry out practice dives and tests it is unlikely that we shall be in fifteen inside 12 or 18 months. It is difficult to predict what limits are safe in depth and distance until we see the lie of the land but one fact is absolutely certain — after a few more generations of cave divers and developments in technique, these limits will probably be regarded as the beginning and not the end of Wookey Hole!

Divers' Walkabout

WHEN *Voyager* re-commissioned in November, 1957, the old crew of divers departed, almost to a man. We were left with one C.D. 3, one Shallow Water Diver, and the prospect of training a complete new team. At this point one must explain the differences in diving training and equipment between the R.N. and R.A.N.

Firstly we will consider training. The system of having Standard, Clearance and Shallow Water Divers has been streamlined in the R.A.N. The people who specialise in diving as a job are now Clearance Divers, with the exception of a very few Standard men borne for salvage work. The Shallow Water Diver has now disappeared completely, being replaced by the Diver, plain and simple. This rate embraces the use of all diving gear to be issued to the ships of the fleet—and that introduces the subject of equipment.

The R.A.N. has almost abandoned the use of pure oxygen as a breathing gas and with that decision has done away with the use, except by 'corkheads', of the Patt 5562A gear. In its place we now have two types of compressed air equipment being known in the trade as 'Hookah' and 'Porpoise' — service names: Surface Supply Breathing Apparatus (S.S.B.A.) and Compressed Air Breathing Apparatus (C.A.B.A.) respectively. The gear itself has been sent to the R.N. Diving School, *Vernon*, for U.K. evaluation, so little point would be served by describing it here. Suffice it to say that we like it and there are several points in its favour:

- (a) Greater depth of dive.
- (b) No danger of anoxia, oxygen poisoning, carbon dioxide poisoning or oxygen syncope.

(c) Simpler equipment to maintain. Because of these changes, not only did we have to train sufficient divers to defend the ship, but all those people who had been Shallow Water Divers had to do a Conversion Course to enable them to use the compressed air equipment. So the story really starts in H.M.A.S. *Rushcutter*, the home of the R.A.N. Diving School, towards the end of last year. There were two *Voyager* courses, one for beginners and one for converting the old S.W.D's to Divers.

Now those of you who are used to Horsea Lake and the rigours of qualifying in mid-winter really should try our system. The weather was beautiful — fine and warm — with underwater visibility extending to 20 yards in places (Shades of the Floating Dock in 'Pompey'!). The courses comprised in all, three officers (including our Captain) and eight ratings, including an ERA, 2 EM's, 3 M(E)'s and 2 AB's — so the talent was evenly divided among all departments. We had a very pleasant and instructive course during which time we ranged from catching sea-horses to searching the bottom of a minesweeper: there was, of course, the usual nausea of untying chain cable on the sea bed, cutting links, etc., with which every 'qualifier' is familiar. Anyway, we all passed eventually and returned to the ship to try and obtain our own equipment — in very short supply at that time. However, due to our being appropriated to the Strategic Reserve, pressure was brought to bear in various quarters and we embarked two sets each of CABA and SSBA — and promptly started doing trials. The gear stood up to every test except that imposed

by a certain gentleman entering the water face-first — exit one face-piece! We eventually obtained a replacement, not without considerable effort on everyone's part, and our gear was complete once again. We waited for our first job.

Sure enough, it occurred at the most inconvenient time possible and involved recovering a bunch of keys for one of the personnel of H.M.A.S. *Melbourne*. The odds were pretty long against success in that venture, as anyone who has tried diving alongside the Fitting-out Wharf in Sydney Harbour will know. Luck was on our side, though, and the keys were found resting on some weeds at the base of the dock wall.

Nothing further occurred until we left for Singapore and our tour Walkabout in the Far East, but our first few days in harbour saw the team exercising in *Terror*, using both the Swimming Pool and the Port Clearance Diving Units' facilities. The monsoon season was in full swing — it was about as wet out of the water as in it — but the training was good value from the diver's viewpoint.

Various tasks, such as checking rudder zincs, clearing the screws and scraping the asdic dome, came our way, but nothing out of the ordinary occurred until we reached Pulau Tioman, an island some hundred miles from Singapore, where we planned to do some diving in the beautifully clear water which is a feature of the place. We anchored some way off shore and our first visitors were soon close aboard — about a dozen bronze whaler sharks! Discretion being, we felt, the better part of valour, we took the diving boat closer inshore and, with a careful eye roving, took to the water. Most of us are used to the beauties

of the underwater world, but the coral and fish to be seen that day and during subsequent dips at islands around Singapore would be hard to surpass anywhere. We almost forgot the shark hazard until, as dusk fell, we began to see shadows where none existed: we called it a day.

Among other jobs which have made the usual run of diving less monotonous, was the search for a \$4,000 camera, lost overboard from a speedboat by a cinema company cameraman who was attempting to take an action shot of some water skiing. We embarked in a borrowed boat and motored around to the reputedly 'marked' position of the loss and, an hour later, started work. The mark was a piece of wood which, it transpired, had been driven into the sea bed some hours after the accident occurred. Of our so-called 'guides,' not one agreed with the others as to the scene of the mishap and, to cap it all, the coxswain of the boat either could not, or would not, veer enough cable to prevent us dragging the anchor: you try explaining the technicalities of anchorwork in Malay and you'll see the point. The tide was strong, the boat was small, and, as we started work, the hopes of success were small. They grew smaller as witness after witness moved the boat to *his* position of the accident. Finally, several hours and a packet of cigarettes later we were forced to abandon the search for the day. We hoped to return to the task a little later, but our sailing date precluded any further attempts to find the camera.

Bad weather dogged us in Hong Kong and our effort to get in a day's dip at Stonecutters Island got no further than loading the gear into our borrowed MFV. A tropical

storm got up over night and we were forced to unload and return the boat. Several other smaller tasks of a routine nature have made up the total of our diving time in the Colony, but we hope to go to Stonecutters before returning to Australia.

And now, Japan and Korea. Despite hopes of a day's practice in Tokyo, we have remained above the surface so far. Anybody who has been in Tokyo Harbour will remember one special feature of the place—black water. Even the Yarra at Melbourne, a river that reputedly flows upside down with the mud on the surface instead of at the bottom, has nothing on the black, oily, evil-smelling water that we found at Shibaura when we berthed. Had a job come along we would have done

it, but, as a practice location, it was not ideal. So we wait for Otaru, Chinhae or Sasebo to provide us with a suitable base for operations.

Our time 'Walkabout' is nearly at an end — we are due back in Sydney in six weeks time — and all of us are now at the stage of crossing off the days till we are safely secured alongside at Garden Island Dockyard. The blue uniforms are coming out of mothballs after being stowed away for eight months. It will be spring in Australia when we arrive, just when you in England will be preparing for the winter; so, as we look forward to a spell of warm waters and sunny beaches, we hope you will not have too much ice on Horsea Lake. 'VOYAGEUR.'



SOME OF THE TEAM

L to R: L/Sea Wotherspoon, ERA Buckman, AB Cross, EM Bellamy

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A Simpler Presentation of the Decompression Table 1

by SURGEON COMMANDER S. MILES

THE *Diving Manual* is becoming a bulky volume in which the decompression tables occupy many pages. It is possible to re-arrange these tables so that they can be conveniently presented in a much smaller and simpler form. Indeed, it is quite easy to reproduce Table I on a single side of a post card and Table II on two sides.

Only Table I is reproduced here (Fig. 1), as Table II in its present form has not been tested and there is reason to believe it will need some modification. Table I also has been curtailed somewhat to cover the dives which are likely to be met in naval diving.

To use this simplified table look along the top for the depth of the dive. Where the actual depth is between two figures the greater, of course, should be taken. Follow this column down to the level of the time spent on the bottom, again taking the higher if the time falls between two on the table. The figure thus obtained represents the total time required for ascent and decompression.

To ascertain how this time should be shared amongst the stops look at the key. In many cases there are alternative ways in which the decompression time may be distributed. In such cases the small letter *a*, *b* or *c* after the time will denote the correct routine on the key.

The times at the stops include the time of ascent from the bottom or previous stop. This simplifies time-keeping but during ascent a rate of 1 ft per second should be aimed at.

The thicker black stepped line represents the 'no stop limit'. For dives to the left of this line no stops are required.

A Pocket 'Stop' Indicator

An alternative method (Figs. 2A and 2B) is to reproduce the table on two rotating discs which can be set to give the stops directly for any dives within the practical range of Table I.

This indicator can be made quite simply as follows:—

- (i) Cut carefully round the outer circle of figures 2A and 2B.
- (ii) Cut out the shaded sectors in Fig. 2A.
- (iii) Pierce accurately the centre of each central cross.
- (iv) Place 2A over 2B and pass a suitable pin or paper clip through the central perforation so that the two will rotate smoothly.

If the indicator has been carefully made the 30 ft depth will remain opposite the 'no limit' line when the lower disc is rotated.

To Use

- (i) Rotate lower disc until the required time (in minutes on bottom) appears opposite the appropriate depth of dive.
- (ii) The correct stops may then be read directly from the lower sector.
- (iii) The thick black lines which appear after some of the times on the lower disc indicate that the limit of the table has been reached for the corresponding depth.

TABLE I
SURFACING TIME IN MINUTES
MAXIMUM DEPTH IN FEET

	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
8																		
9																		
10												5	5	10b	10b	10b	10b	15
11																		
14																		
15				NO	STOPS					5	5	10b	10b	15	15	20b	25b	25b
17																		
20										5	5	10b	15	20a	25b	30c	35b	
25										5	10b	10b	15	20a	30b	35b		
30										5	10b	15	20a	25a	30b			
35										5	10b	15	20a	25a	30b			
40										5	10b	20a	25a	35a				
45										5	10b	15	25a	30b				
50										5	10b	20a	30b					
55										5	15	25a	35a					
60										10b	20a	30b						
65										5	15	25a	35a					
70										5	15	25a						
75										10b	20a	30a						
80										10b	25a							
85										15	25a							
90										5	15	30a						
95										5	20a	35a						
100										5	20a							
105										5	25a							
110										10a	25a							
115										10a	30a							
120										10a	30a							
130																		
135																		

KEY FOR STOPS			
	Stops (Mins.)		
	30'	20'	10'
DECOMPRESSION TIME (MINS.)	5	—	—
	5	—	5
	10a	—	10
	b	—	5
	15	—	5
	20a	—	5
	b	5	5
	25a	—	5
	b	5	5
	30a	—	5
	b	5	5
	c	5	10
	35a	5	5
	b	5	10

TIMES AT STOPS INCLUDE TIME OF ASCENT FROM BOTTOM OR PREVIOUS STOP

RATE OF ASCENT = 1 FOOT PER SECOND

NO LIMIT

Fig. 1

Standard Dress. Divers for the use of, 1

THE following is the drill in use for rigging up and turning loose in manner quite beyond repute a sailor in a diving suit.

The first equipment I must stress begins the Standard diving dress of canvas-rubber watertight is fit to use by day or night

Into this dress the diver goes completely cased from neck to toes. The bib of twill pulls up inside around his neck to catch the tide.

The shoulder pad, an oval collar is fitted next, because what follows is rigid, heavy and would wreck the diver's shoulder blades and neck.

The corselet or breast-plate copper should now be fitted snug and proper underneath the collars moulds six studs protruding through the holes.

Two brass strips are fitted right to make the breast-plate watertight, not to forget by touch and feel the slotting of the rubber seal.

On front and back studs now is placed a jock-strap quite securely laced, comfortable when suit's inflated.

Around the neck a 2 lb line with eye and cut splice one should twine to secure the breast-ropes fitted there and also to fasten the pipe for air.

The diver sits down wearing suit, a boot is fitted to each foot securely laced with line so thin tied with reef knot round the shin.

The helmet is placed o'er the head and twisted to engage the thread. A belt is fitted and a knife for freeing underwater strife.

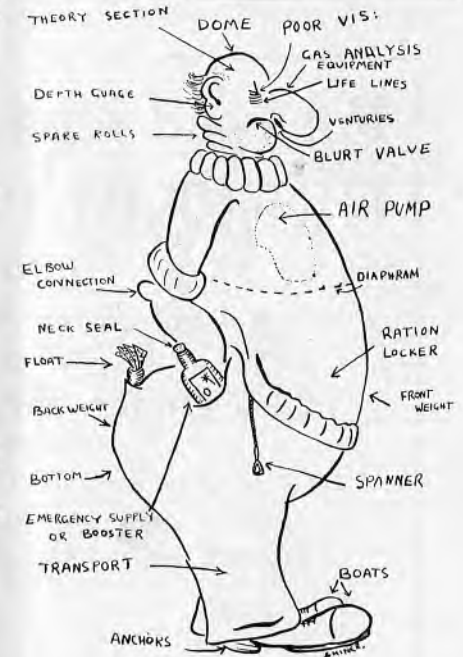
On the breast-plate o'er the head are hung by line the weights of lead. The line in use should not be rotten or diver will not stay on bottom.

The pump is started at steady pace. The face-glass then is screwed in place.

The air for breathing at the limit is 1.5 cubic feet per minute.

The diver now descends at last, the pump must be rotated fast for further notes the reader oughter read *Drill for divers under water.*

ANON.



Anatomy of a Diver

Steamers v Corkheads

As a result of the many requests by non-service subscribers to the magazine for definition of a Steamer and a Corkhead we offer this explanation.

Before World War I all Service diving was in the hands of the Army. Indeed, the old Diving School at H.M.S. *Excellent* was run by the Royal Engineers. Gradually this responsibility was taken over by the Royal Navy who ensured that all large ships and many R.N. salvage vessels included divers in their complement. This was most advantageous when World War II started but it was soon apparent that they could not even hope to stem the number of casualties to our shipping.

New techniques and equipment had to be forthcoming and more men were enlisted into the Branch. They

performed magnificently but soon new demands were being made on them.

Countermeasures had to be found for the new types of mines the Germans were laying too close to the shore for our sweepers to be effective; the Italian underwater sabotage teams which struck so silently had to be thwarted. Thus there developed a specialized group of divers known as the Port Clearance Diving Unit. They discarded the Standard gear and used a self-contained breathing apparatus and the Sladen Dress — otherwise known as the Clammy Death.

These divers were volunteers from all walks of life and were trained by the Standard divers who had been transferred to this new-style diving. Many books have been written and

films made of their exploits. Unfortunately, when the great demobilisation ended only a small nucleus was left. Nevertheless, it contained such famous personages as Buster Crabbe, Guts Gutteridge and Jock Gribben. These men could not be kept down, and, after the Palestine trouble, the nucleus grew and they changed their name to Clearance Divers. These are the Corkheads.

From this you must have gathered that the Steamers are the Standard

Divers. Today these 'daddies' of diving face the threat of extinction while the C.D's forge ahead. At present one can only speculate on the outcome of the two departments; perhaps the clock will be turned back as has already happened in other navies. Whatever happens we can be sure that the Royal Naval Diving Branch will continue to carry on in the best traditions of the service.

LT. OTLEY, O.D.D., R.N.

Cape Town—Durban by Bicycle

(Continued from previous issue)

8th Day. Friday June 15th.
Keurboom's River—Stormsrivier.
39 m.

We knew we had some steep hills ahead of us today, and an early start was made despite the relatively short distance to be covered. Leave of the kind Mr and Mrs Koch was taken at 7.30 a.m., after they had supplied us with breakfast, and we then began the long pull out of Keurboom's River. After this hill was surmounted there was a good level ride for about 12 miles and then began the Grootrivier Pass. (All the passes mentioned hereafter are the kind that go down to a river and up again, rather than up to a pass over a mountain and down.) It was a steep, winding descent to the river, and M(E) Booth, who was by now much recovered from his earlier ailment, was separated from his bicycle early in the descent at a sharp bend, with the result that both he and his bicycle were somewhat the worse for wear. A passing motorist kindly picked up the pieces and deposited them at the hotel which was our destination for

the night. From the bottom of the Groot-Rivier Pass to the top was very hard work indeed; the bicycles were heavily weighed down with packs over the rear wheels, and on the steep slope the front wheel tended to lift off the ground as we pushed uphill. Towards the top, we came past a pull-in with just sufficient space for one car. A car was on it, a large, shiny, American automobile. Standing near to it, camera in hand, was what seemed to us almost a caricature of an American tourist. For a few moments he watched us struggling past in twos and threes. Then he ventured a question to one pair as they passed him: 'Say, where are you guys goin?' 'To Durban' was the breathless answer. Then the next group came past, 'Say, where have you guys come from?' he asked. 'From Cape Town.' He considered this for a moment, and then, as more weary cyclists came abreast of him: 'Say, are you guys Brittish?' 'Well, yes, as a matter of fact, we are'. A sympathetic smile spread across his

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face: 'Ah, I thought so.' Clearly another case of 'Mad dogs and Englishmen'!

Some more level road before the next bit of toil — the Blaauwkrantz Pass, with its magnificent scenery. Shortly after starting the ascent from the bottom of the pass, Lt Stacpoole and Mech Wand came across a puff-adder taking its ease in the middle of the road. Not knowing a puff-adder's sentiments with regard to sailor cyclists, they tried to encourage it to move over with handfuls of grit. The only reaction on the puff-adder's part was an erect, swaying, hissing head and perceptibly hostile glances in their direction; whereupon 'Sam' Wand engaged the enemy more closely with a large rock, which effectively caused all enemy resistance to cease. However, the disposal of the corpse still remained to be done, and this was carried out with proper caution by Lt. Stacpoole, using a very long stick. Shortly after this the same pair saw a baboon crossing the road. Our destination for the night, which was reached shortly after the ascent of the Blaauwkrantz Pass, was the Forest Inn in the Tzitzikama Forest. The last stages of the day's ride were marked by misfortune for M(E) Farmer, who was riding with Mid Butterworth. Farmer's tyre split and was unrepairable. The situation was ably dealt with by Butterworth, who took off the front wheel with the split tyre, got a passing motorist to take him to the Forest Inn where he collected the front wheel from Lt Stacpoole's bicycle, got another lift back to the point at which he had left Farmer, fitted the front wheel into Farmer's bicycle, and the pair of them eventually arrived at the Forest Inn, where repairs of a more permanent nature were made. M(E) Booth and his bicycle were also

patched up there. It was another afternoon and evening of lavish hospitality; Mr Henry, the manager of the hotel, providing for a nominal charge refreshment on arrival, tea, dinner, accommodation and breakfast. Advantage was also taken of the swimming pool—one of the facilities of the hotel—and of the other recreational amenities. Some small return for all the kindness we received was provided by the efforts of EM Patterson and LREM Swift, who managed to repair the 16mm cinema projector which was the property of Mr Henry Jr. It was, however, Mr. Henry Jr who repaired the front wheel of Booth's bicycle.

9th Day. Saturday June 16th.
Stormsrievier — **Humansdorp.** 54 m

About three miles from the hotel along the main road towards Port Elizabeth is the Stormsrievier Pass, which is spanned by a very recently constructed bridge, and a very impressive bridge at that. It saves great labour in following the old road down to the bottom of the pass and up again. Yet, believe it or not, some of the party did exactly that — they followed the old path, having taken the wrong turning on leaving the hotel. Those who took the upper route spent some time on the bridge, gazing down into the gorge, and discovered as a result of some experiments that a 'ticky' (3d piece) takes five seconds to drop from the bridge to the bottom.

Our journey today was not too arduous, and the majority of the party reached Humansdorp by lunch time, where we were accommodated at St Mark's parish hall by the rector of Humansdorp, the Reverend H. Harvey. Meals were taken at cafes in the town. The four section-leaders were very kindly entertained in the rectory by the

rector. In the evening a reception was given by the mayor at the Star Hotel, at which the mayor made a speech of welcome and a reply was made by Commander Wilson. This reception was extended for some time and made even more enjoyable by the presence of some nurses from the hospital.

10th Day. Sunday June 17th.
Humansdorp — **Port Elizabeth.**
58 m.

A number of the cyclists attended the 8 a.m. Holy Communion at St Mark's Church before leaving Humansdorp for Port Elizabeth, our first really large town since leaving Cape Town. When the 'church party' was about two miles along the road to P.E., Fr Harvey drew up in his car, bringing with him what we call in the Navy the 'scran bag' — all the odds and ends we had left behind at the parish hall. Such is the thoughtfulness and kindness we received at all stages of our journey. The first part of the day's run was across country which could not in any way be called level, and it included two passes. Eventually, however, we emerged on to a really level road for the last 20 miles into P.E. This 20 miles was covered at a grand pace, and our entry into the city itself through the outer suburbs was the occasion of much friendly attention from the citizens. Most of the party arrived shortly after lunch at the South African Navy Reserve Base, S.A.S. *Donkin*, where we were greeted by a familiar naval atmosphere, and all our requirements were promptly and efficiently met by the officers and ratings of the P.E. branch of the S.A.N.R. While we were at P.E. we got the axes re-shafted and some maintenance work done on the bicycles. A riotous braaiivleis was held in the evening,

followed by a dance and social in the drill hall, which certainly went with a swing, thanks to the presence of some gallant young ladies from the city. Lt Stacpoole, who was suffering from a chill, turned in behind a settee in the wardroom and slept through all the merrymaking.

11th Day. Monday June 18th.
Port Elizabeth — **Weeks' Farm.**
44 m.

Most of us took breakfast at a cafe in town, then returned to the naval base to pack up our gear and thank our hosts. Our departure today was very highly organised — even to the extent of a police motor-cycle escort, who took us in drizzling rain through the town, past all traffic lights, until we arrived at Mr Mosenthal's emporium; Mr Mosenthal being the agent for Hercules bicycles, which most of us were riding. He put at our disposal all his cycle mechanics, who quickly went to work remedying the various defects still remaining on our bicycles. He also offered us what we needed in the way of tinned food, biscuits, chocolate and cigarettes — 'on the house'. At these magic words a far-away look crossed the face of JS 'Porky' Wickens, his eyes came out like organ stops, and he disappeared at great speed into the depths of Mr Mosenthal's warehouse. Sometime later he emerged, with bulging pockets and cheeks, and under his arm a five pound box of caramels! After receiving freely of the bounty of Mr Mosenthal and doing our very best to render thanks for such generosity, we were 'escorted out of town' (in the best sense of the phrase) by our motor-cycle escort. The ride along pitted roads through the industrial outskirts of the city in by now pouring rain was not the best part of the day for us, but before the end of the forenoon

the rain had cleared and the sun was out. It was on this day that we met Herr Rehder, the German motor-cyclist who had come overland from Germany on his two-stroke motor cycle. The trip, which so far had taken him six months, had been via Italy, Libya, Ethiopia, Kenya, Tanganyika, etc. He was quite on his own, but seemed very happy in his solitude and had had many interesting experiences. This day's journey was not without tribulation as regards hills, and an additional complication was that our objective was a single building described as being 'a prominent house with a dairy and a red roof, at the 40th milestone'. As the milestones were non-existent after the tenth, our task was not made any easier. When we were at what we considered to be the right area, we came upon L/Sig Roberts, who had been riding with his customary vigour and had been well ahead. He had made enquiries, he said, and had been told that the place we wanted was 30 miles further on. By this time we were both tired and hungry, and this was not pleasing to our ears. There was no cause for depression, however, as we came upon Mr Weeks' farm soon afterwards, just as it was getting dark. Here we were accommodated in a sheep-shearing shed. Mr Weeks had not been warned of our arrival, but he did everything possible to provide for us. We must have just about cleared his house of all the food in it. The large hampers of juicy pineapples which he provided made an excellent start to our supper, and Mr Mosenthal's tinned food provided 'the makings' of both supper and breakfast, and when supplemented by Mr Weeks' potatoes, coffee, milk and sugar, the first requirement of a cyclist — food — was met. This was a most generous

and prompt action of Mr Weeks.

12th Day. Tuesday June 19th.
Weeks' Farm — **Grahamstown.**
42 m.

It seems that little of South Africa is really level — in spite of what the motorists say — and today was no exception. It seemed to be all up and down. What was worse — as far as some members of the party were concerned — it was entirely devoid of cafes! There were some who claimed to have stopped at every cafe on the road between Cape Town and Durban! However, the pineapples supplied by Mr Weeks kept us from the worst effects of starvation. The pineapples, which are obtainable so cheaply in the 'pineapple area' of South Africa, were a great blessing to us, and the progress of *Kenya's* cyclists across Africa was marked by neat little piles of pineapple husks at the roadside. It was at the bottom of a particularly long pass through Howieson's Poort Valley that we came upon the Stone Crescent Hotel — a welcome haven, which helped us on our way with tea and scones. From there it was only 5½ more miles to the very attractive university town of Grahamstown, where we were directed by the police to the drill hall. Showers were obtained at the Carlton Hotel, and meals at various cafes in town. There was much to be seen: Rhodes University, the cathedral, the museum; and we should have liked longer time to spend leisurely admiring the city as a whole. However, we were by no means adverse to the reception given in our honour by the mayor at the town hall. It was here that we were privileged to meet Mr Spencer-Chapman, headmaster of St Andrew's School, and author of the books *The Jungle is Neutral*, and *Lightest Africa*.

Our interest in meeting him was heightened by the knowledge that he had so much to do with the founding of the Outward Bound movement which encourages the type of activity in which we were engaged. It was at the reception also that a number of the cyclists were invited to join in a recorded interview for the South African Broadcasting Corporation. We also met the dean of Grahamstown, an ex-naval chaplain, who took some of us back to the deanery after the reception. Others were entertained by Major Van Zeal. At the end of the day Sam Wand was the possessor of a genuine springbok skin, a worthy souvenir of the visit.

13th Day. Wednesday June 20th.
Grahamstown — **Kingwilliams-**
town. 75 m.

Knowing we had over 70 miles to do today we started early, at about 7 a.m. After the initial climb out of Grahamstown the road was not difficult, and about 24 miles out we pulled off the road at a spot where a farmer called Mr Roberts kept a fruit stall. Here he generously supplied the entire party with Coca-Cola and as many pineapples as we could carry away. The little town of Peddie was reached in time for an excellent lunch at the hotel, the cost of the lunch being borne by Mr Wild, a retired naval officer resident in the town. After lunch our troubles began; the road was hilly, and there was a succession of passes; the only consolation was that the last three miles into Kingwilliams town were all downhill. Captain Brahma, of the S.A. police, had met us several miles outside the town and led a group of cyclists straight to the centre of the town, where the ladies of the Red Cross supplied us with very

welcome tea and sandwiches in their hall. From there we were taken to the Barkley Hotel where a reception was given in our honour and the mayor, Mr Erasmus, made a speech of welcome. The four section-leaders were most comfortably accommodated in the hotel by the kindness of the proprietor, Mr Levanthall, while the rest of the party found excellent meals and very comfortable beds at the Boys School of Industry, by courtesy of the principal, Mr Princlou. There was a sing-song there in the evening and much merriment of one kind and another. A collection was taken amongst the cyclists and handed over to the matron of the school to be given to the boys who had done so much to look after us.

14th Day. Thursday June 21st.
Kingswilliams town — **East London.**
37 m.

After the initial climb out of Kingwilliams town it was an easy ride to East London. We had all arrived by 1130 and were taken to the South African Navy Reserve Base, S.A.S. *Port Rex*, which was very similar to S.A.S. *Donkin* at Port Elizabeth. There was tea for us as soon as we arrived and, after getting settled in, lunch at the Missions to Seamen nearby, where the padre, Padre McCullum, gave us a warm welcome and told us that a dance had been arranged for us in the evening. After lunch, a sick parade and a bicycle muster were held. The doctor gave medical attention to several of the party who had not been feeling too well, mostly with abdominal pains. A list of defects on the bicycles was compiled, and arrangements made for spare parts and cycle mechanics to be brought in to deal with any defects which our engineers had been

unable to tackle. These were supplied entirely free by Messrs R. C. Slater & Co. Also many pairs of shoes were in need of repair — we seemed to have walked almost as far as we had ridden our bicycles — and this was taken care of by Messrs W. M. Cuthbert & Co. Ltd., who arranged for their factory to stay open late to cope with the work. This service again was provided at no cost to us whatever.

The remainder of the afternoon was spent in shopping and in looking round the town. Many of us went to the fine modern museum and saw the famous *Coelocanth*; some went to the bioscope as well, where we saw a newsreel which contained pictures of the start of our tour from Cape Town. Most people attended the dance at the Missions to Seamen which went very well, and altogether a very happy day was spent with the kind people of East London. The mechanics came in during the day and effected the necessary repairs, so that we were now ready for the long trip up through the Transkei.

15th Day. Friday June 22nd. East London—Komgha. 45 m.

Most members of the party got away quite early, but it was our practice throughout the trip to have a rear-guard, usually consisting of one or other of the section-leaders, with one or two other cyclists with him carrying tools and first-aid equipment. This arrangement was effective in picking-up stragglers or dealing with cycle defects or minor injuries; the section-leaders took it in turns to do this job, and on this occasion it was the turn of Padre and OA Hack and OA King. They remained behind after the others had left to collect mail from the post office, and to convey our compliments and

thanks to the deputy police commandant who had done so much for us during our stay in East London, particularly by having us directed to the S.A.N.R. base on our way into town.

Our way during this day's ride lay through the Ciskei territory, and there was general disappointment at the fact that it was quite bare of cafes or other places of refreshment! This however we had expected and most of us had stocked up well with food of various kinds at East London. In the afternoon we reached the turning to Komgha off the tarred National Road. We were not, however, required to cycle along the stony road which leads to this very charming little town, as we were met by representatives of the town council at the road junction, and were asked to leave our bicycles at Mr Clayton's farm opposite the turning to Komgha. We were conveyed in cars to the town where we were taken straight to the Royal and Central Hotels. Once again, we were all given meals and comfortable beds at no cost to ourselves. In the evening a reception was held at the Royal Hotel; this was attended by the mayor, Mr de Villiers, his town clerk, Mr Jeffries, who had organised our visit at very short notice, and other people from the town, including the Vicar of Komgha, the Rev Fr Jones, who took some of us to see his very charming little church. At the reception M(E) Rogers was in great form and soon the entire company was singing 'Alouette'. In the course of this party Sam Wand was presented with a monkey, but it was not practicable for him to take it with him on the bicycle. However, it certainly caused a stir at the reception by leaping about from shoulder to shoulder. After the reception, many of the cyclists were

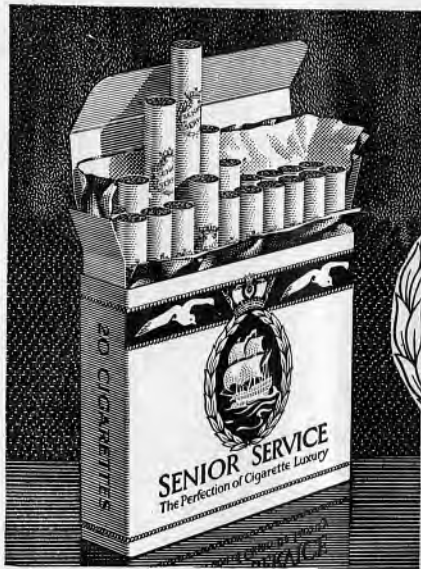
entertained in the homes of the people of Komgha.

16th Day. Saturday June 23rd. Komgha—Itduitywa. 49 m.

Feeling quite sure that *real* Outward Bounders would strongly disapprove of our having early morning cups of tea in bed, we were on the road at 7.30 a.m. to ease our consciences. This was the day that we entered the Transkei, the huge area populated almost entirely by natives, who still live in their round huts. But first we had to cross the Kei River; this was done down through a long pass. But on very well-graded National Road routes such as this we were, by now fairly expert at riding uphill — and fairly fit, so it did not give us much trouble; moreover, we had three-speed gears on our bicycles. The subsequent country seemed, and was, more up than down, for we had to climb from sea level to over 5000ft before dropping down again later to the sea at Port Shepstone, and for once the wind was not in our favour. However, we were interested by the sights and sounds of native life which we noticed as we passed along the road between the groups of native dwellings. We noticed that some of these were painted white, while others were not. In due course we arrived at our lunch time rendezvous, the little Transkei town of Butterworth. Our arrival seemed to be the occasion of keen interest, and we were most kindly received, first at the town hall where we were given coffee and an opportunity to make ourselves a little more presentable, then at the Bungalow, Masonic and Henly Hotels where we were taken for lunch. Once again we were not allowed to pay for our meals. We were sorry not to be able to stay longer in Butterworth, but we still

had some distance to go and so we bade farewell to Sgt McKitterick, Fr Wilson and the others who had been our hosts, and continued across the open country of the Transkei towards the little town of Idutywa. Some miles outside this town Commander Wilson and ERA Maxted were overtaken by a Morris Minor, which was making a very unsatisfactory sound as it passed. A short distance further on, it stopped, as Commander Wilson had predicted. When the two cyclists came up with it, the lady driver and her lady passenger were looking somewhat concerned, as there was no garage for miles. They accepted gratefully, therefore, the offer of assistance. It was not a difficult problem — there was no water in the radiator! The contents of two water-bottles were provided and the driver advised to wait until the engine cooled off before filling up and trying to start again. At Idutywa we were directed to the Masonic Hotel where food and drink were provided, and sleeping accommodation was found in the school, which was on holiday. Other meals were taken in the restaurant in the town and at the hotel, and a fairly quiet evening gave us an opportunity to deal with such domestic matters as washing clothes and letter writing. The Padre and Commander Wilson were kindly invited to take dinner with Dr and Mrs Thompson; all the other guests were in evening dress and they at first felt a little embarrassed attending in this unusual night-clothing of pullovers and somewhat dirty trousers. Mrs Thomson handed Commander Wilson a letter to be delivered to her daughter who was married to the Governor's ADC at Gibraltar. Unfortunately this had to be sent by post eventually as HMS *Kenya* never did reach the Mediterranean after all.

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17th Day. Sunday June 24th.

Idutywa — Umtata. 56 m.

Though the Reverend D. W. Reynolds, Rector of Idutywa, was away at another church taking services this morning, he kindly put his church at our disposal, and Padre celebrated Holy Communion. The congregation were given breakfast afterwards in the rectory by Mrs Reynolds. The wind was again strong today, and by no means always with us, but we made fair progress. 18 miles out from Idutywa we came to the house of Mr Woods, whose wife supplied every cyclist that passed through with tea and cake. Some of the cyclists were stoned by mischievous small native boys shortly before this, but we doubt whether there was any really malicious intent and no damage was done. From Mr Woods' house down through the Bashee River Pass and up the other side and on, until, some miles out of Umtata, we were met by Mr Bruce and Mr White, who informed us of the arrangements that had been made for our arrival in Umtata. A little further on we met Mr Jamieson, who had come with his car loaded down with bottles of Coco-Cola which he distributed to the cyclists as he met them. He also accommodated two of the cyclists in his house overnight. Part of the programme arranged for us by Mr Bruce, Mr. White and Mr Jamieson consisted of a visit to a native village where we saw something of native life at closer quarters, and learned of native traditions and customs. Some in the party were intrigued to learn that a man can have as many wives as he can provide huts for and that the men do little work! After this we were all taken to the Golf Club where there was a reception at which we were officially welcomed, and we did our

best to reply. It was at this reception that Sam Wand acquired a pith helmet, on which he had inscribed the names of a great many of the people who entertained us here and at other places on our journey. The centre of our social activities during our visit was the Regent Cafe, where good food, good company, and a sing-song were all enjoyed during the course of the evening. The life and soul of the party was the proprietress of the cafe herself. Overnight accommodation for most of the party was provided at the school which had just broken up for the holidays.

18th Day. Monday June 25th.

Umtata—Qumbu. 39 m.

A late start today, which gave us time to see some more of Umtata, which is the capital of the Transkei and the centre at which many of the native affairs' administrators reside. Amongst them is Mr Pearce, who kindly took us on a most interesting tour round the Bundu, the native parliament, and gave us an account of the purpose and development of the body that meets in this building. In the course of this talk and in subsequent questions we discovered, amongst other things, that the white-painted native huts that we had seen along the way indicated the inhabitants were Christians. While the majority of us were doing this, Sam Wand was busy at work in a garage, welding the bottom bracket of one of the bicycles, a feat which he accomplished successfully as well as repairs to 11 other bicycles.

There was a last rush for tea and meat pasties at the Regent Cafe before we rode off to the billtong factory on the edge of the town, where we each collected a piece of billtong and said goodbye to our hosts before continuing our ride. The Transkei

does not really cater for the cyclist, and we were very glad therefore to come upon Mrs MacGrigor's trading post at the Tsitsa river, where tea and soft drinks refreshed us. Our destination for the night, Qumba, was a short distance off the main road, and at the road junction we formed up by sections and rode into the town *en masse*. The section-leaders were accommodated in the Qumbu Hotel, the rest of the party in the town hall where Dr Stafford came to treat several people with various minor injuries and ailments. There were refreshments at the town hall when we arrived, and a huge meal laid on for us in the evening at the hotel by the ladies of Qumbu (including Mrs MacGrigor) which satisfied even the heartiest of our appetites. Afterwards a pleasant social evening was spent in the lounge of the hotel. M(E) Booth was one of the people requiring medical attention — his abscess was troubling him again — and he was advised not to ride for the next day or two.

19th Day. Tuesday June 26th.
Qumbu — **Mount Ayliffe.** 54 m.
For the first time the wind was really against us. This lasted all morning while we proceeded slowly over hilly country to Mount Frere, where at the Mount Frere Hotel a very welcome buffet meal was given to us by Mr Allen and Mr King. Whether it was the nourishment received at lunch-time or whether the wind had really dropped it is hard to say, but it certainly seemed less difficult going in the afternoon. Easier, that is, until we reached an unsurfaced stretch of road. This was our first experience of riding on a dirt road with heavy packs on our bicycles, and it was not made any more pleasant by the wind which whipped up a stinging dust. Earlier in the

afternoon we had passed down to the Umzimvubu River and up again, which was quite a long haul. We were still in the Transkei here and continued to hear the slightly oriental-sounding chant of the natives, and see their peculiar triangular-shaped skid-fitted vehicles drawn by teams of as many as 12 oxen. The rough road caused a certain number of defects to the bicycles, particularly split tyres, but we all reached Mount Ayliffe during the afternoon. M(E) Booth and J/Sea Crowhurst had had to come from Qumbu by car and lorry, not being fit enough to ride. We were received at the hotel at Mount Ayliffe by Mr and Mrs Coughlan, who went out of their way to see that we were supplied with meals and accommodation; 22 of us stayed at the hotel, the rest were given accommodation by people in the village. The Dutch Reformed Church minister kindly provided beds and meals for two of us. Once again we had to ask for the services of a doctor, and Doctor Johnstone recommended that Booth continued to travel by car for the time being. The police at Mount Ayliffe, Sergeant Marais, got in touch with Kokstad by telephone and warned them there to expect us for lunch the next day. In such ways as this was our journey made easy. Commander Wilson and M(E) Fellows examined in the village an electric power generator which had broken down, and although unable to repair it on the spot were able to diagnose the trouble and make recommendations for its remedy when spare parts should be available the next day.

20th Day. Wednesday June 27th.
Mount Ayliffe—**Harding.** 56 m.
After breakfast, cyclists converged on the hotel from all parts of the village, many bringing their hosts

with them. When the party had been mustered, counted and re-counted, we set off for Harding, via Kokstad. Booth and Crowhurst were taken by Mr Coughlan in his car. Not far out of the village, Tel Underdown had the misfortune to have the front forks of his bicycle break on the rough road. But in no time at all a motorist driving a station-wagon came along and enquired whether he could help. The bicycle was put inside the station-wagon — so was Underdown — and both were taken on to Kokstad where new forks were obtained and fitted. The toughest part of the day's ride was up the hill known as Brook's Neck. We were able to ride up most of it, very slowly. At the top we found Mr Coughlan and his car pulled up at the side of the road and there was Mr Coughlan dispensing bottles of beer, which could not have been provided at a better moment — we were ready for them. From the top of Brook's Neck it was a good run down to Kokstad, where we were welcomed at the town hall and given an enormous lunch — in fact our hosts looked most disappointed over the fact that there was some food remaining when we left. We were interviewed and photographed by the Press — the bearded members of the expedition having a photograph all to themselves, and by this time Padre was included under the heading of bearded for he had discontinued shaving on leaving Cape Town. Soon after leaving Kokstad for Harding we were again on an unsurfaced road, and this time it was unpleasant because our way was by now largely downhill and it became difficult to hold our heavily-laden machines on the road at the speed we should have liked to let them travel. Some people were unsuccessful in keeping on the road, but no-one was hurt. During the afternoon

we again met Mr Coughlan, this time on his way back from Harding, and he was still handing out bottles of beer. Mr Coughlan went to exceptional trouble on our behalf and we were very grateful to him. The Commander, Padre, and the two OA's, were the rearguard for this section of the journey, and they soon found it necessary to put on warmer clothing as the afternoon drew on and it became colder. Soon it also became darker. Flagging spirits were revived by the remains of a cold chicken which the Commander had been carrying for some one hundred and fifty miles past, and also some fruit cake supplied by OA Hack. The last part of the journey was undertaken in complete darkness on a very rough and, to us, very strange road. The sight of the lights of Harding was a welcome sight indeed. Even the vanguard of the party had arrived only as it was getting dark and cold. Moreover, the citizens were not expecting us. However, they soon rallied round and arranged for a meal and a wash at the hotel followed by a children's concert at the town hall, after which we were to be allowed to bed down there. The concert was a great success, including such old favourites as scenes from *Alice in Wonderland* and Jack Rogers playing 'Alouette'. Afterwards there was a slight slip in the drill and the cyclists got in amongst the performers' patisserie! This, however, was apparently taken in good part because, as we were unstrapping our bedding rolls, one after the other was invited to spend the night in a home, until in the end no-one slept in the town hall. Doctor Barwise actually put up eight of us. Mr Taylor, the town clerk, who did so much of the arranging at such short notice, took three of the section-leaders into his

home. Altogether, this was one of the jolliest stops of the trip — even for Booth, who had his abscess lanced, and felt much better for it.

21st Day. Thursday June 28th.
Harding — **Port Shepstone.** 55 m.

We were advised to take the 'upper route' to Izingolweni, and taking this advice we set off in what appeared to be exactly the opposite direction from that in which we should be going. However, the road, though still unsurfaced, was not too bad, and at length it gradually curved round, taking us through lovely wooded country, and over folds of the hills from which we could see right down to the coast, until we rejoined the main road, still untarred, and more unpleasant than the side road on account of the great number of cars on it to stir up the dust. Just outside we completed the 1000 miles from Cape Town, but nobody seemed to show any great enthusiasm for this fact. We were at Izingolweni by the middle of the morning, and there we were given tea, sandwiches, scones and cakes, which helped us on our way over the very rough road with a corrugated surface and up the very steep Wilson's Cutting on the way to Port Shepstone, into which we straggled at various times throughout the afternoon. A number of cyclists were misdirected at a road junction near a small place called Paddock. As a result they ended up in the bar of the Paddock Hotel where the proprietor and a number of British ex-Service men dispensed drinks. It was then discovered that the directions given at the road junction had been intentional as it was feared we might pass by without stopping. At Port Shepstone we were directed to the police station where we left our bicycles and were quickly collected by a number of

hosts who accommodated us in their own homes. Booth and Crowhurst were again brought by car. The Moths did a wonderful work in arranging hospitality and entertainment for us. There was a highly successful dance at the memorial hall in the evening and the citizens of Port Shepstone were not at all dismayed (or if they were, they didn't show it) when we announced that we had a day in hand and intended to stay another day at Port Shepstone.

22nd Day. Friday June 29th.
At Port Shepstone.

After a meeting at which plans for the day and the next day were explained, and bicycles and clothing cleaned up for the last lap into Durban we were then free to spend the day as we liked. There does not seem to have been much difficulty in finding ways of occupying the time. Padre, who was staying at the rectory with the rector of Port Shepstone, the Reverend Lionel Knights, was taken by him in his car to Durban where he completed the arrangements for our arrival in Durban. He returned, of course, to Port Shepstone in the evening. It was a day which we all enjoyed to the full, though as a day's rest from the rigours of cycling it was hardly a success for there were many gay parties in the evening.

23rd Day. Saturday June 30th.
Port Shepstone — **Amanzimtoti.**
61 m.

By 8 a.m. most of the cyclists had arrived at the police station, and we all had the opportunity of thanking our respective hosts, as well as the police and representatives of the various organisations, for their splendid hospitality. We got away shortly after this, and on to the smooth tarred National Road along the

south coast of Natal to Durban. About 21 miles out of Port Shepstone we were given refreshments at an hotel run by Mr Munro who persuaded Commander Wilson to try some oysters. A light lunch was taken at a roadside cafe. It was a most pleasant day's ride, not too hilly, a following wind, warm and sunny, and all the while close to the shore of the Indian Ocean. By tea-time we had all arrived at the River Gardens Hotel at Amanzimtoti, about 18 miles out of Durban, Mrs Rodkin saw to it that we lacked for nothing, and we all had a very happy evening at the hotel, with kindness of every sort being bestowed upon us, including a dance. One person we almost forgot about was J/Sea Crowhurst, who had been taken by car from Port Shepstone to the police station at Amanzimtoti. Booth was able to cycle again, to his great joy.

24th Day. Sunday July 1st.
Amanzimtoti — **Durban.** 18 m.

In spite of our exertions the previous night we managed to get on the road at 7 a.m. This was important, as we had a strict schedule to keep to, and for some members of the party it meant going without breakfast. Just before we started, Crowhurst rang up. It seems he spent the night at the police station. 'Were you comfortable?' asked the Commander, 'Er—well, yes, thank you sir'. What the Commander said after that is not recorded. By 8 a.m. we were at the city limits, where we were met not only by a police motor-cycle escort but by cars containing Press and movie photographers. In addition, a vast furniture-van type of vehicle had now joined us, with the words HERCULES BICYCLES emblazoned on it. Inside was Sam Wand, whose Hercules cycle had let him down at

this critical juncture by getting a puncture. No fault of the machine, of course, but very disappointing for Sam. We now rode in sections two deep, and on the dual carriage-way four deep. This continued as we passed through the industrial suburbs of Durban until we came to the Outspan Hotel, where we were welcomed by the Lord Mayor of Durban, and given breakfast by the Navy League. The mayor in his speech formally welcomed us to Durban, and assured us of the delights that awaited us. Within 24 hours we realised how truly he spoke. Commander Fawcett of the Navy League also spoke and, being a retired naval officer himself, seemed to think that our bicycle trip was a Good Thing. At 9.30 on again complete with escort, who took us straight through Durban to the Missions to Seaman, where Padre Don Rogers welcomed us and gave us more refreshments, before inviting us to attend a Service of Thanksgiving in the Mission church. With the exception of the Roman Catholics, who went to their own church, everyone attended this service, which was conducted by Padre Rogers, and at



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which the address was given by our own Padre. After the service we were again fed and then taken in ferries to the South African Naval Base at Salisbury Island, where we once again 'joined the Navy' and lived in messes and the wardroom. The S.A.N. were most hospitable, and after lunch shore leave was given. Many of the cyclists also attended the evening service at the Missions to Seamen on the occasion of the centenary celebrations of the Missions to Seamen.

25th Day. Monday July 2nd. At Durban.

An early breakfast, and on to the ferries at 7.15 a.m. which took us across to the Gardner Street jetty from where we cycled cautiously along to the T-jetty, where we assembled by sections to await the arrival of the South Atlantic Squadron, headed by our own H.M.S. *Kenya*. When she was berthed, the Commodore came ashore to inspect us and talk about the trip. Then we went on board. Our journey was ended, just 1105 miles from Cape Town.

Mediterranean Fleet Diving School

ONCE more we put pen to paper to bring to you some items of interest and amusement from dear old Malta, where we still sweat and strain to keep pace with the ever-increasing demand for S.W.D's. Our efficient staff, against all odds, is still turning them out as fast as Dunlop's can turn out the sets. Diving in skin is now becoming less popular due to the swift change in weather but even so it hasn't completely died out yet.

A little more about the school since the last edition; we're really moving into the Park Lane class now. The H.P. compressor has arrived at last and this together with our own R.C.C. and the new bottle stowage and work benches really makes the place look like a Diving School. We've been thinking of curtains for the store but haven't got around to it yet. Slowly but surely the tubular steel diving jetty that we are building is taking some shape, but, as we can only work on it at odd moments, the erection is necessarily slow.

We expect new heads and shower room to be installed when we reach the top of the Works Department's roster, and an extension to the diving store due to the expansion in business. At the end of the month, we are holding a dance-cum-social at the school for all the fleet divers and their ladies. Being the first of its kind we are going to watch points carefully to see if it is successful. If so, it will become a regular annual feature to get 'old diving pals' together for a yarn on their past, present and future. *Reclaim* should be here by then so no doubt there will be many hands wrung and fabulous amounts of ale consumed.

We have had quite a number of jobs lately, though nothing really out of the ordinary except for the occasion when someone on coming back for his parked car found it had disappeared. Frantic searching ensued and it was found a few fathoms down, where it had run back into the sea. It was neatly salvaged by Lt Wookey and CPO Foggin using

C.A.B.A. In the news again, we just can't help it.

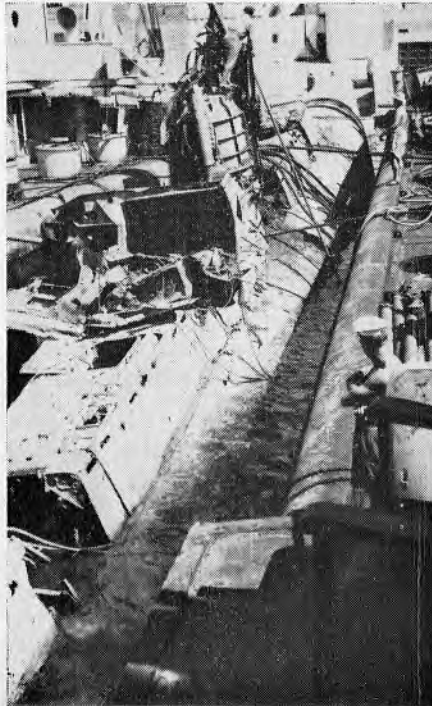
Sporting activities have also taken a lot of our time lately. We have had the inter-port aquatic sports, in which we, in conjunction with the M.F.C.D.T., did not do badly at all. We were knocked out in the final of the water polo competition by the Royal Marines after a very good match. Various events in the swimming races were also won, and over all we took third place, which was a particularly good effort considering the small number of people we had to choose a team from in comparison with the other teams. Two AB's, who were on course at the school, have been chosen to represent *Phoenicia* in the Mediterranean Fleet Aquatic Championships to be held in the near future: AB Edwards in the high diving and AB Wallace for swimming. Both of them are really very good. Now the football season is under way we are sorting out a team for the inter-port competition. There may be a lack of bodies but there is no lack of keenness or sporting spirit here.

Also in the sporting line we have our first female underwater enthusiast in PO Wren Olive Fisher who was ably trained by PO Clark at weekends; she is now pretty good with compressed-air diving and dives at every opportunity. Don't all rush round here though, we haven't started classes for lady frogmen—yet! By the way, for anyone deciding to take up compressed-air diving as a private sport, there is a very good book which will be a

great help to you called *Free Diving*, by Dimitri Rebikoff.

The submarine *P.36*, which was mentioned in our last literary effort, has now gone to its final resting place. She was lifted from Lazarette Creek some time ago by the B.D.O. and pulled ashore, where she was stripped of her conning tower and a few other odds and ends before being towed out and dropped in deep water. As torpedoes and ammunition were still on board it was impossible to send her to a scrap yard.

S.A.H.A.



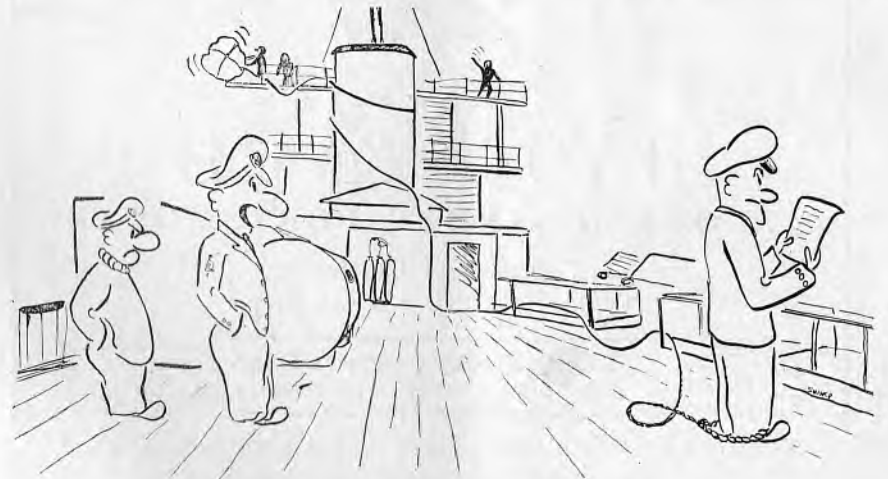
Command Bomb and Mine Disposal Unit H.M.S. Lochinvar

GREETINGS from the sunny North, gentlemen, where we are busy as usual with mine disposal and diving jobs. It may interest readers to know that during this wretched summer one of the sunniest places in the British Isles has been the North West of Scotland and the Hebrides. Once again let me stress that I do not receive a retainer from the Scottish Tourist Board. Since the last issue of the DIVING MAGAZINE we have had several changes in the unit. At the beginning of July we bade a fond farewell to Chief Nick Carter, George Robbie and Hughie Harrison. Chief having managed to dislodge Stan from the chair in HMS *Vernon*, Robbie having donned his bowler and taken to the open road of the commercial traveller and 'Wee Hughie' having decided to go and sort out the trouble in the Far East. Their places have been

taken by Pusser Mk 1 and Mk 2, namely PO Hills and L/Sea Hills and 'Lolly' Rogers the famous Fulham supporter. All seem to be settling down well, and gradually learning the language and one of them even knows what happened in 1314.* The unit now consists of Lieutenant McLanachan, PO Hills, L/Sea Davey, L/Sea Hills, AB Webb and AB Rogers. We are willing to accept challenges at 5-a-side 'fitba' or cross-country.

Lieutenant Lermite arrived at the end of August to relieve Lieutenant Whatley, had a quick look round HMS *Lochinvar* and then headed south for the fleshpots of Portsmouth and Portland. We certainly miss the good company of HM Ships *Dingley*, *Blenchley* and

* 1314, Battle of Bannockburn, Scots under Robert the Bruce heavily defeated the English under Edward II.



'Always said 'e drove 'em too hard'

Brearley and look forward to their return. Work is proceeding apace with the new Forth Road Bridge, one of the pillars of the organisation being our old friend Mr Currie-Davis late of the C.D. branch, and well-known in the Portsmouth Command for his Bomb and Mine Disposal activities. He calls for a 'cuppa' from time to time and needless to say we are always pleased to see his tanned and smiling countenance.

We had a very interesting trip last week to deal with a mine washed ashore in the Island of Coll, one of the small Western Isle. We travelled by Land-Rover to Oban arriving at 0300, 'Cracked our bonces down' in the lounge of MacBrayne's Steamer *Claymore* until 0630 when we set sail for Coll calling at Tobermoray en route. (Memories of the galleon and the scallops.) The steamer doesn't



'Should've ducked; wann'an Aspro?'

go alongside at Coll so we had to transfer to a small ferry boat. We were met on the boat by a Mr Jardine, a real character, who runs the one and only hotel. He organised our transport to the mine by car and lobster boat. This Mr Jardine does the following jobs:

- 1 Runs the hotel
- 2 Farms a large croft
- 3 Is a lobster fisherman
- 4 Assists in running the ferry

5 Breeds Arab horses and is also a member of the life-saving crew. He seems a man of unlimited energy and in his day has done car racing and played polo with the Cowdray. Coll has no electricity, and its population—which was 1,100 in 1700, 450 in 1900—is now only 150. Well, this is about all the news from the Old Country, except to send our best wishes to all divers everywhere,
Cheerio, MAC.

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*.

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Time Expired or Expires.....

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Willing to Serve Abroad.....

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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.

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