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MINEWARFARE AND DIVING



VOLUME 1	NUMBER 2	1 MAY 1990
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Brocklesby stars in movie - Pages 14-15

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EXTRA
COLOUR
FEATURES

MINEWARFARE AND DIVING



**THE MAGAZINE OF THE
MINEWARFARE AND DIVING COMMUNITY**

Front Cover: HMS BROCKLESBY, bristling with full weapon-fit enhancements, streams her Combined Influence Sweep off Gibraltar.

VOLUME 1 NUMBER 2

1 MAY 1990

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Foreword



By
Commodore S. H. G. Johnston, Royal Navy
COMMODORE MINOR WAR VESSELS AND MINESWARFARE

In this forward for the Minewarfare and Diving Magazine, I want to dwell on the brighter and more positive aspects of our world.

There is no doubt about professional ability; the Gulf Operations were a clear demonstration of this and much of the success of the SANDOWN class on the international market is attributable to the high esteem in which our minewarfare expertise is held abroad.

Despite the severe financial constraints being imposed on Defence as a whole we must not despair. The MCD world has done reasonably well in the fight for resources. In SANDOWN, we have a most technically advanced MCMV. When her trials are finished and she is working to her designed capability, she will be a world beater. A contract is about to be placed to provide equipment to improve HUNT class precise navigation and a study into a mid-life update for the class is well underway. The introduction of a computerised weapon practice analysis system is allowing a much more qualitative assessment of our minehunting performance to be made. A new exercise minelaying system is being procured and the battle has finally been won for Fresh Water making plants to be permanently fitted throughout the HUNT Class.

Given the current problems with DSSCCD and its associated equipment, the early re-introduction of mixture diving in the Flotilla is my personal top priority.

The successes achieved and the significant progress that is being made is through all of you, at sea, ashore and in the training establishments doing your jobs well. Keep at it.

MINEWARFARE AND DIVING



EDITORIAL

Varied reactions to the new format of this magazine were anticipated and varied reactions were indeed received. Thankfully the vast majority of those who wrote in, mainly using the pre-formatted response page (repeated in this edition on page 36), were very complimentary and supportive.

The editorial committee decided, prior to publication of the first edition, to publish the two extremes of opinion received and thereby to reflect in all future editions any constructive changes proposed by the readership. The two letters thus selected are included on page 27 and any future comments or proposals would be very welcome.

Several minor *faux-pas* were reported in the last edition, some regrettable and some defensible. The omissions or errors amongst the "Where Are They Now?" Special Supplement brought the most comments, mainly dry humorous ones, principally from Commanders and extended service Chief Petty Officers. Apologies to those thereby affronted - rest assured your respective Appointers and Drafting Officers now know where *you* are! With regards to the retired Officers who received their copy of the magazine addressed to "Mr", rather than their retired rank, this was a deliberate policy to comply with present Naval security regulations which preclude the use of Service titles for home addresses. No offence was meant - even though some was taken. After all, it is for your own protection.

The article by Richard Bell-Davies (ex-CO HMS CATTISTOCK) brought a sensitive issue to light, namely journalistic accuracy. His article "The Hunt For The Lost Tornado And It's Beacon" concluded with the statement that "...analysis of the flight recorder and subsequent Board of Inquiry revealed that the crash was caused by pilot error". Whilst that statement now concurs with the consideration of the full Board of Inquiry, it is accepted by the editorial staff of this magazine that, although based on an initial signalled report, at the time of publication the text could have been deemed to be precipitous. Our appreciation is extended to Director, Marine Services (Navy) for raising the issue. The editorial committee reserve the right to continue to investigate any matter relating to Minewarfare and Diving operations and to publish articles considered relevant to the spirit of the magazine.



● Paul Beaver, Publisher of Jane's Information Group, awards Warrant Officer (MW) George Turnbull with the latest Underwater Warfare Systems Yearbook for his Main Feature article on the new C.I.S. film (Pages 14 & 15).

Comment was received regarding the origins of the RNR MCM branch (Volume 1.1 Editorial). Perhaps it was not made clear that the statement "The RNR PD and MCM branches are still at the infancy stage of development..." referred specifically to the recent creation of the MCM sub-specialisation for Seaman Officers (in accordance with HTM(R) 30/89). The editorial staff are aware of the long-standing service rendered by the Ratings of the RNR Minewarfare Branch.

In this edition, readers will find, for the first time, "Tugg" cartoons highlighting various articles. This is, we hope, the start of a long-standing relationship between the Navy's favourite cartoonist and the world of small ships. Because Tugg spent all his years in the RN serving in Carriers, he volunteered to spend time at sea in HMS BICESTER to get a feel for the world of Minewarfare and Diving. Thanks, BICESTER and Tugg!

Thanks also to the staff of CS(PS) of Royal Arsenal, Woolwich, for distributing the magazine around the world (apologies to the CO of HMS ONSLAUGHT for the three-fold delivery - at least we know where we can find a few spare back-copies!). In particular, special thanks to the staff of the Photographic Section in HMS NELSON (Gunwharf) for their speedy and efficient service.

A recent series of events, including an horrific accident to a LS(D), have highlighted the need to review some standard working practices - especially regarding oxygen cleanliness - in the diving world. The Inspector of Diving and the Diving School have responded accordingly on Pages 5 & 9. The number of "ANYMOUSE" contributions (Page 4) has certainly increased, but still more are needed. This magazine, whilst fulfilling the need for an informative exchange, will always concentrate upon the Health & Safety aspects of the Diving and Minewarfare fraternities. Perhaps, given sufficient support for the idea, a "Safety Commendation" could be introduced, for personnel considered to have acted so as to prevent an accident or dangerous practice?

To the very few who wrote claiming a lack of substance in the first Edition, or too little mention of their particular field of operations, please use the Reader's Response Page and contribute! We look forward to receiving your "meaty" articles for the next Edition, due out 1 September 1990.



● Lieutenant Roland Rogers receives his prize from Paul Beaver of one year's free subscription to International Defense Review for the best photographic contribution in this edition (Oceanography - Pages 22 & 23).

Damage Control

The following report was submitted anonymously. We thank the sender and would be happy to give fuller acknowledgement if identified. The hulk shown at right has suffered attack by two Sea Skua missiles. Be the damage incurred factual (as shown), or fictional (as below), how would you react to the massive damage that a mine or missile could inflict upon your ship?



● Photograph Courtesy of BAe (Dynamics)

REPORT OF DAMAGE TO SHIPS GEAR

Sir,

1. I have the honour to submit this report, written in haste, before you should form your own preconceived opinions from reports in the world Press, for I am sure that they will tend to over-dramatise the affair.

2. We had just picked up the Harbour Pilot and the Midshipman had returned from replacing the flag "Golf" with the flag "Hotel" and, being his first trip, was having some difficulty in rolling up the "Golf" flag. I therefore proceeded to show him how and, coming to the last part, I told him to let go. The young Gentleman concerned, although willing, is none too bright, necessitating my having to repeat the order in a sharper tone. The Executive Officer, over-hearing from the Chart House and thinking that my order referred to the anchors, repeated the "Let Go!" to the Petty Officer on the Fo'c'sle. The effect of letting-go the port anchor while the vessel was proceeding at 12 knots proved too much for the windlass brake and the entire length of the cable was pulled out "by the roots". I fear that the damage to the cable locker may be extensive. The braking effect naturally caused the vessel to sheer in that direction, right towards the swing bridge that spans a tributary to the river up which we were proceeding.

3. The swing bridge operator showed great presence of mind by opening the bridge for my vessel. Unfortunately, he did not think to stop the vehicular traffic. The result being that the bridge partly opened and deposited a Volkswagen, two cyclists and a cattle truck onto the Fo'c'sle. In his efforts to stop the forward progress of the vessel, the Petty Officer dropped the starboard anchor, too late to be of any practical use, for it fell on top of the swing bridge operators control cabin on the jetty below.

4. Up until now, I have confined my report to the activities at the forward end of my vessel. Down aft, they were having their own problems. At the moment the port anchor was let go, the Chief Boatswains Mate (CBM) was supervising the making-fast of a small harbour tug, and was lowering the ships towing hawser down to the latter vessel. The sudden braking effect of the port anchor caused the tug to "run in under" the stern of my vessel just at the moment when the propellers were answering my emergency "Full Astern". The prompt action of the CBM in securing the inboard end of the towing hawser delayed the sinking of the tug by some minutes, thereby allowing the safe abandoning of that vessel.

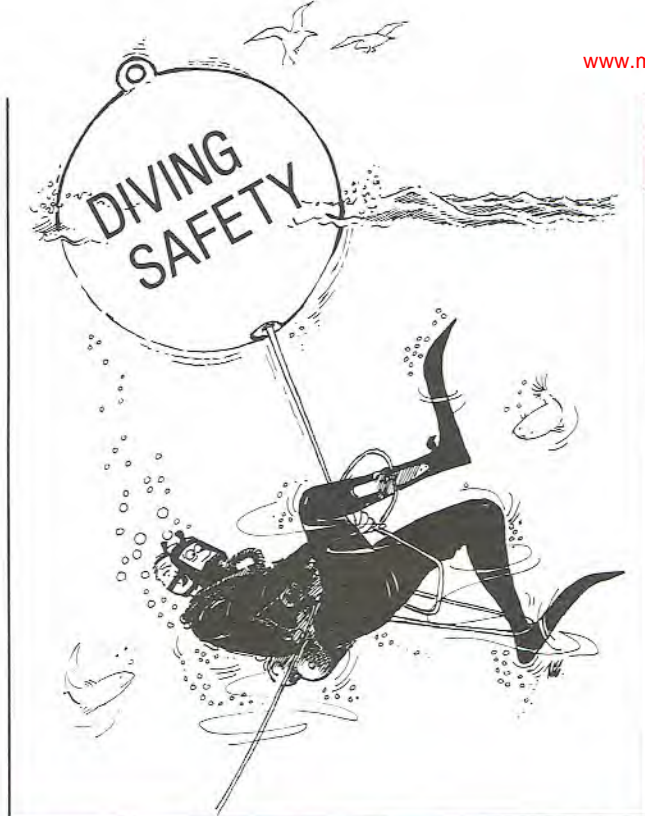
5. It never fails to amaze me, the actions and behaviour of foreigners during moments of minor crisis. The Pilot, for instance, is at this moment, huddled in the corner of my cabin, alternately jibbering to himself and crying after having consumed an entire bottle of duty free Gordons Gin in a time that would be worthy of inclusion in the Guinness Book of Records. The tug Captain, on the other hand, reacted somewhat violently and had to be forcibly restrained by my Steward who, at present, has him handcuffed in the Wardroom pantry.

6. I enclose the names and addresses of the drivers and insurance companies of the vehicles on my Fo'c'sle which the Petty Officer collected after his somewhat hurried evacuation of the foredeck. These particulars will enable you to claim for the damage inflicted upon the 30mm gun and guardrails.

7. I am forced to close this preliminary report for I am finding it difficult to concentrate - what with the distraction of police sirens and blue flashing lights. Had the Midshipman realised that there is no need to fly pilot flags after dark, none of this would have happened.

I have the honour to be
 Sir,
 Your obedient Servant
 (name and address withheld)





Diving Safety

This is an important section to highlight incidents involving diving safety, a point of concern to all. It is requested that articles of interest be forwarded to Inspector of Diving for possible inclusion in this magazine. In no case will names or Unit identities be published - the aim is purely to raise safety standards.

Cylinder Charging

An AB(D) was preparing to charge a suit inflation cylinder. He secured the supply end of the charging whip's safety lashing to a secure point and then he secured the discharge end of the lashing around the suit inflation bottle.

While the AB(D) was charging the bottle, the charging whip parted at the fitting on the discharge end. The escaping high pressure air had enough force to lift the suit inflation bottle and cause it to flail around. Before he was able to shut off the high pressure air, he was struck by the suit inflation bottle and sustained cuts and bruises.

Comment By I of D

Diving Safety Memorandum 02/90, gives the specification for attaching a safety lashing on high pressure gas whips and charging hoses. Additionally this memorandum states "when charging small cylinders such as suit inflation cylinders, the cylinder itself is not considered a secure point". The lashing should have been securely attached to some other point, thereby restricting the charging lead's range of travel.

Charging Panels

A LS(D) recently attended a fire fighting course and an integral part of this is the use of Breathing Apparatus (BA). He was appalled to find the following:

1. There was no briefing by staff on the correct methods of charging BA and what safety precautions should be undertaken.
2. Staff did not monitor the course using the charging panel.
3. Instructions for the use of the panel were displayed overhead and therefore could not be read when charging.
4. Inadequate numbers of ear defenders - only 2 pairs for 6 charging points.
5. No eye protection was available.
6. Incorrect and inadequate lashings of charging whips.
7. Personnel charged BA cylinders by opening the HP valve fully rather than at a controlled rate.
8. Valves opened in an incorrect order with the isolating valve to the gauge shut therefore charging to an unknown pressure.

The LS(D) duly approached the Senior Rate in charge and pointed out the problem. Unfortunately, no response was forthcoming and the above conditions remained throughout the day.

On return to his unit, the LS(D) again reported the problems he had encountered but this time action was taken: the officer to whom he reported contacted the OIC of the school concerned, who expressed his disbelief but said he would investigate. The OIC called back within the hour and stated that all points raised were indeed factual.

Comment By I of D

The actions carried out by the LS(D) were correct and he prevented a possible accident. A BZ for him but, the Senior Rate to whom he reported, failed in his duty to ensure that safe practices were carried out. This could have led to serious injury or death. He should have responded in a positive and direct manner when the LS(D) highlighted the problems.

BY OIC FIRE FIGHTING SCHOOL:

All defects highlighted have now been rectified. All BA charging should be conducted in accordance with BR 2807(4)(A).

NATO Diving

Within the year, most of you will have access to a new NATO publication entitled ADivP-1(Navy) "Allied Guide to Diving Operations".

This book reflects an input by all Nato Diving Nations. It has been formulated by the Underwater Working Party, which meets once a year, in Brussels. It is edited by our Naval Staff Author on behalf of DNW. The UK has now ratified this book with the exception of the Chapter on Divers Hand Signals. However this is not a major issue, neither is it the first time the UK has been out of step within NATO. The publication's primary purpose is to assist Commanding Officers in assessing area diving capabilities. Several NATO studies are also being conducted by this Working Party and the UK is a Correspondent for them all (some of which will appear in STANAGS), including:

- Evaluation of Diving Accident Patients.
- Treatment of Refractory Decompression Illness.
- Diving in Polluted Water.
- Thermal Protection of Divers.
- Factors Concerned with Deeper Clearance Diving.
- Underwater Engineering.

INSPECTORATE TEAM CHANGES

By I of D

There is now a new line-up for the Diving Inspectorate: the USN Exchange officer is now no longer appointed to the staff of the Superintendent of Diving as the Inspector of Diving.

This post is now to be held by an RN officer and Lt Cdr Stu McAlear was selected from a short list of candidates and formally took up his position on 5 March 1990. The current team is now:

Inspector of Diving	Lt Cdr McAlear	24876
Inspector of Clearance Diving	WO(D) Kidman	24866
Inspector of Ships Diving	WO(D) Green	24583
	(tbrb WO(D) Still 5 Jun 90)	
Inspector Engineering	CPO MEA(M) Kirk	24866

The terms of reference for the Inspectorate are laid down in BR 5063 article 0393 and it would be worthwhile for all to have look at these. The real aim is to minimise, in relation to operational constraints, that element of risk that is inherent in all diving operations. Reduction of risk can be tackled in many ways:

1. Good initial training.
2. Programmed continuation training.
3. A sound awareness of first aid (covering all eventualities).
4. The "6 Ps" Prior Planning Prevents P... Poor Performance.
5. In the event of an incident what should I do?

This list is not exhaustive but gives a starting point for safety. Routine inspections can help to ensure a sensible adherence to the rules and regulations and, with this, achievable standards. Inevitably accidents will occur and we must learn as much as possible from them and to modify equipment if it is at fault and improve procedures if they are wrong.

Diving safety is the concern of everyone and it is the role of the Inspectorate to advise on problems when requested. If in doubt give us a call.

New Ships Diver Capability

by Jim Green

Our entry into the new decade of the 1990's sees some significant changes in the Ships Diver capability.

Firstly, the reduction in their maximum depth from 30 to 21 metres. (Amid much bar room discussion, Ships Divers openly admit to seldom exercising beyond 10 - 15 metres. A few isolated cases may venture deeper, but they are few). This reduction in maximum depth has allowed the inclusion of a one week Tool Training module in lieu. Hopefully, Ship's Divers will gain enough knowledge in the use of underwater tools and equipment to effect minor repair work and more complex maintenance than at present. Most Ships Divers are enthusiastic about the higher skill level - an enthusiasm not matched by certain members of the Fleet Engineering Staff: "...the thought of a xxxxxx Chef doing *anything* underwater unsupervised doesn't get my support". The MDDS Diving School claim a far greater success in getting Chefs to work unsupervised than the Cookery School at HMS PEMBROKE ever had.

Ships Diving teams continue to have manpower problems. A keen Diving Officer who enjoys maximum support from his command will invariably be well-complemented with Ships Divers, (mainly hoodwinked from among his own ships company in the early stages of his appointment). Sadly, some teams are either poorly supported or have too little time allocated between patrols or deployments to address any shortcomings (especially the sun-dodgers of the submarine world).

Few accidents involving Ships Divers are ever reported, leading one to believe that they don't occur....but then maybe you know otherwise...statistics have previously been kept to a minimum simply by keeping the ships short of equipment: no gear, no diving, no accidents! But, from April 1990, the flood gates open; plenty of equipment, plenty of diving.....watch this space for accident reports.....all S2022s and S333s rendered correctly please.

Monthly Dippers

by "Deep Thought"

For those divers who want a mental challenge whilst counting off their much needed minutes underwater, you need now go no further than the Monthly Dippers Section at Horsea Island! In a highly commendable break from the traditional "Jackstay Blues", there is now a staff challenge for underwater construction using 10 scaffolding poles, 2 adjustable spanners and a bucket of flexible joints. A tote is kept of the "Best Time" for completion of each of the construction designs. The staff are always open to new ideas for tasks using mine lifting bags, scaffolding and bits of rusty

“...shortage of scaffold poles...”

old ordnance..... the only shortage at present is in the scaffold poles department, so anyone with a friend or relative in the trade please contact either LS(D) Wimpey or AB(D) McAlpine C/O Monthly Dippers Section, Horsea Island.

All those in favour of an EOD underwater recce circuit (to provide a continuation training facility for divers previously thus qualified at DEODS) should send their support to the Staff Officer Diving & Demolitions (SODD), c/o MDDS Faculty of SMOPS. HMS NELSON (GUNWHARF). Additionally, if you have an old piece of ordnance blocking your garage door.... as long as it has a legitimate "FREE FROM EXPLOSIVES" tally with it, why not return it to the deep? All donations gratefully received via the Chief of the Lake.

With regards the new Tool Training Facility - also to be built at Horsea Island - funding is looking very promising for the financial year 1990/91: More news next edition. Keep the dits and gossip coming, especially concerning those who are working hard, behind the scenes but who don't always get the credit that they deserve.

Army Diving

TRAINING IN THE 1990s

by Tony Wareham

By the author:

This is not intended to be self-congratulatory. It is an article to inform units how the Royal Engineer Diving Establishment is responding to the challenge of training soldiers in a specialist role that is of use to the unit. If the Establishment ceases to provide this service to the customer - the regiments in the field - then the whole concept of diving in the Corps is called into question.

In the 1990s diving in the services generally, and in the Royal Engineers in particular, will produce new challenges. This is not only the result of changes in Eastern Europe, which may affect the entire concept of future operations, of which diving is a small (but significant) part, but also because the standards that divers, both military and civilian, have to attain by law are becoming much more rigorous.

Changes

Real costs are escalating rapidly and therefore it is essential that all training is relevant, cost effective and comprehensive. At the Royal Engineer Establishment there has been a restructuring of the courses to meet this challenge. This has been evolutionary rather than revolutionary and has been geared to producing greater numbers of trained divers in the Corps with a high standard of proficiency. This is now being achieved and it reflects well on the instructors who have, in many cases undergone radical changes in attitude since their own diving training courses. The attitude of, "It was good enough for me, therefore that is how it will be done" has been replaced with "How can we improve our standards?" During the last two years there have been a number of changes, some of which are discussed below. They should not be regarded as the definitive answer, but more as another step on the way to promoting and improving diving in the Corps.

Instructor Quality

The standard of Serviceman applying for diving training is fairly consistent (the aptitude test weeds out the most unsuitable). Ensuring a high pass rate therefore rests on the quality of instruction.

Instructors have a duty to coax weak students along, only advising Returned To Unit (RTU) action if the student cannot be brought up to the standard required. The basic course is now more structured in content, but more

flexible in attitude. PT is no longer a coarse sieve designed to remove weak students, but is a method of bringing soldiers from widely differing backgrounds to a common standard where they can cope with the real physical challenges of diving. Illness no longer attracts automatic RTU action. Students are given time to recover from minor afflictions (colds are a particular problem) and are only RTU'd if they have lost so much ground that they cannot catch up. (One student managed to complete the course, despite spending two days in hospital, but this was exceptional).

Achievement underwater is now of greater importance than simply time spent there. This Establishment is always looking for new skills to trial underwater, both in combat and construction engineering. This means that the courses are more interesting and ultimately more relevant to the customer - the student's parent unit. Students now spend as much time on as many varied dive sites as possible, doing as many different tasks as possible. This means that the unit receives a more professional and effective diver at the end of his course.



"...instructors have undergone radical changes in attitude...."



Improved Training Resources

Outside the Portsmouth area, training takes place at Portland (for all long courses) and at Plymouth (Advanced courses only). Facilities at both locations have been very much improved, largely due to the assistance of the Royal Navy.

All courses at Portland are now accommodated at HMS OSPREY. This has raised the level of support to the student and ensures that his welfare is taken care of more effectively. There are three advantages: firstly, the student is better prepared for arduous training; secondly, the training staff are no longer wasting time on administrative detail and lastly, security aspects are covered by an organisation equipped to deal with the increased threat. New storage facilities at Wyke Regis and Portland ensure that students spend less time moving equipment and more time undergoing training. More diving sites have been *reccied* so that courses do not return to the same site every day and bad weather does not halt training.

At Plymouth, the working relationship with the Royal Navy is excellent. The Fleet Diving Tender DATCHET enables advanced students to undergo the best deep diving training available. The staff there ensure the course gets away from the virtual buoy and out to worthwhile diving sites. Successful negotiations for the use of a dam wall (40 - 50m deep) will enable advanced divers to meet their job description more fully.

More Supervisors

Good diving supervisors are the ambassadors for diving in the Corps. There are not enough of them. However excellence cannot be sacrificed for numbers. The course has been completely restructured; students are taught the skills they will need, which are then improved upon by positive instruction at all phases of the course. Students are no longer "put under the microscope and pulled to pieces". They do make mistakes, but they learn from them. Instructors must be capable of making objective decisions about a potential supervisors capability which are not based on simple pass/fail criteria. The pass rate has significantly improved, and feedback from units suggests that the modern student is just as good - and in many cases better - than his predecessor of several years ago. The significant factor is that more diving supervisors are being produced.

“SWEEP DEEP, SWEEP CLEAN.”

By Will Davies, B.E.M.



● **HMT EARL ESSEX**
(Artwork copied by CPO(MW) "George" Kegg)

On the 3rd of September 1941, I joined the Royal Navy at Torpoint, Plymouth. Britain at this time was fighting on many fronts and the R.A.F. were proving a match for the Luftwaffe. Even with outdated ships the Royal Navy, in spite of setbacks, had contained the German fleet. However it was the U-Boats that were hitting the country hardest, as every Merchant ship sunk meant less food, less ammunition and less war supplies so vital in the task of defeating the enemy.

Harry Tate's Navy

A big part in the sinking of our ships was played by mines laid by aircraft, surface vessels or U-Boats. Many ports around our coast were well and truly blocked and the country would have been crippled if it hadn't been for those gallant little ships of the Royal Navy Patrol Service. This was made up from requisitioned trawlers and crews of fishermen, ex-merchant seamen and anyone with previous sea experience. I qualified because of my Bristol Channel Pilotage days.....as a cabin boy!!!

In 1939 we had just 76 ships of minesweeping capabilities and 40 of these came from the fishing fleet. To the members of Royal Navy, the trawlermen were known as "Harry Tate's Navy". It was a misconception sweeping mines was a cushy job, The channels around our coast had to be swept every day, even when there were no mines there. How else would you find out? Wait around to get sunk?

Some 126,000 mines were laid in our waters and to clear them cost us 327 minesweepers and 4,600 men. Oh! Yes! it was really a cushy job.

Hammering and Tearing

"H.M.Minesweeper EARL ESSEX" an ex-trawler of the name, was built in 1914 and fished out of Hull. She was 400 tons net weight and had triple expansion engine, powered by super heated boilers. She could steam along at a steady six knots, with 500 fathoms of 2.5 inch sweep wire, with otter board, kite and cutters all astern of her. Generations of fishing men had all contributed something to the design and layout of these vessels. Normally she

Editor's Note: This fascinating account of life in the Royal Naval Patrol Service was kindly submitted in response to the "Big Badge Challenge" on the rear cover of Volume 1 Number 1 of this magazine. It was considered the best of the three replies published: the two runners-up are included on Page 37.

would tow 900 fathoms of trawl wire and heavy trawl and sometimes with half-gales blowing.

The phosphor-bronze propeller was some 15 ft below and would bite deep into the green sea, whilst her curved, slim stern would settle lower. The ship could hold against a gale and the roaring sea would fight against her, but she would cock her bow up haughtily and draw only 9 ft of it in the water. Any seas that climbed over it would get shaken off or thrown aside, any that reached the fore-deck would be spent in force and be sent back through the scuttles to rejoin the raging mass of the cruel sea. But that was fishing come hell or high water. Get those trawls out, then fill the holds and full speed for the market.

No Glamour

All this had altered when I joined the "EARL ESSEX". The former fish holds had been cleaned out and made into living space and the effect of a heavy gun on her fore-castle gave her the tendency to yaw like a pendulum. Now she was minesweeping, making safe the seas for the passage of others, without glamour, groping along, forever searching the dark depths, then searching yet again, until she found the evil eggs that had been spawned in hell and once found, had to be destroyed. Such was the work of a minesweeping trawler. "From things that go bump in the night, Lord preserve us."

A favourite sleeping place whilst sweeping was on the engine room casing, just behind the funnel and one always had an arm through the tapes of an inflatable life jacket.

It was an obvious choice, as you had a reasonable chance of going over the side if a ship struck a mine or was hit by a bomb.

Minesweeping

There were cooler and more comfortable places on deck to sleep, but by tradition, the British sailor always choose the warmest spot and if that was by the funnel then by the bloody funnel he would sleep. With the advent of a new and more sophisticated mine...the magnetic ...sweeping took on a new role.

Stormy Night

The "EARL ESSEX" had a new technique. The 500 yards of electrical cable needed to combat the new menace, was stowed on either side of the ships deck and lumped in and out by hand! It was only on the more up-to-date and purpose built minesweepers that cables were on reels and came in and out by winch power. Picture a dark and stormy night with a heavy sea running.

It's cold and you're wet. You've only had an hour's sleep. At the signal you place the cable on your shoulder and run it aft to drop it, through the rollers, over the stern, then forward again to get another bight, until the whole length is outboard. It went on by day and by

"...it went on, by day and by night, week after week..."

night, week after week and all around our coast line, it had to be done to ensure the safe arrival of those ships that had survived the U-Boat ridden waters of the North Atlantic.

Of course, dealing with mines and coping with heavy weather wasn't the only hazard the trawlers had to face. How many times I've heard the cry, "look, there's lots of the bastards coming". And then would come that pulsating sound, the uneven throb of aircraft. The alarm bells ring out their strident cry and immediately the guns are manned. We had a 12 pounder on the forecastle and a 20mm aft, with a couple of Lewis machine-guns on the bridge. Through the binoculars, it looked like dirt on the lens, until it flashed and you realised it was planes, in orderly formation at anything up to 10,000 ft.

Open Fire!

A group peeled away at an angle, they came lower and were bent on attacking the small fleet of ships that were striving to complete the task of clearing the channel before the arrival of the convoy. Thump! a pause, then Thump! again. Just ahead the "STELLA RIGAL" has opened fire. Then further away, high up in front of the planes, puffs of smoke appear, obviously another of the ships has joined in the chorus of gunfire, possibly it's the "ETRUSTAN". You hear the call of the

Captain, "Open Fire" and our guns bark viciously and you can feel the backlash and the pungent smell of cordite fills your nostrils. By now all ships are letting loose and the approaching enemy planes seem to be heading into a sky full of cottonwool balls. "Bloody Hell! The "STELLA RIGAL" has got one of the bastards!" a yell goes up from someone and one of the planes, now very clear, lurches and tilts over and drops steeply seawards, with the ominous red glow and finger of black smoke coming from the engine. The roar of aircraft is almost deafening and was punctuated by the frequent but irregular crash of gunfire.

The ships were now throwing everything they could and the planes spilt up, left and right, one group running along the length of the ships, whilst the other flew over the top. The machine-guns opened up with a nerve shattering clatter and lines of tracer converge on a plane. Surely it was a hit, but it races on, engines rising in a noisy crescendo as it passes over the flock of little ships.

Near Miss

There's a dull thump and the "EARLESSEX" heels over slightly and a plume of water rises just off the beam. "Bloody near miss, look out here's another coming". The machine-guns open up again, this time the after guns put in their pennyworth. The opening attack eases away as the enemy aircraft roar off to reform. A clatter of noise fills the air, but now it's from men getting more ammunition to the gun's, whilst others clear away the empty shell cases. The cook, the steward are dragging ammo boxes to the machine-guns, stokers as well, for this is a ships company fighting for its life.

Suddenly it's so quiet you can hear it. It's the sound of silence. A faint flecked sky and a distant purr of planes; the first wave of the attack is over. When will the next one be? It's now you feel scared and your knees go a bit shaky and you find yourself breathing in sharply, as if you'd just run a race, your lips are dry but you can't moisten them. "Aircraft bearing red eighty, angle of sight 20 degrees" and here we go again. The roar of engines are now distinct once more and the "ETRUSTAN" is spitting fire at three planes which are obviously going for just the one ship. Our 12 pounder opens up and the machine-guns from all parts of the ship are sending their deadly strings of tracer skywards.

Thump! Thump!

Sometimes it happens in action. One plane will come in without anyone firing at it, you hear the thud of it's engines, look up and glimpse the two wings and as you watch you see a bomb falling away from it. Through the turmoil of noise you hear the CO yelling "Hard-a-Starboard". There's a vicious rattle, like someone throwing gravel at a window,

the "EARL ESSEX" reels away, the bow surging upwards and as she rights herself, the bomb goes off below the water, just on the beam.

Water cascades down over the bridge and you find your head singing and a drumming noise in your ears. The funnel now looks like a watering can. The plane had sprayed as she came in- that was the gravel like sound we heard. Again, the sullen roar as a plane swoops in and Thump, pause Thump of the 12 pounder and the eager chatter of the machine-guns. The aircraft was threaded by a deadly, fiery necklace of tracer and she turned away in a half circle....no need to worry about that one anymore.

"...out sweeps, in sweeps, patrol the area..."

And so the scenario went on, never changing very much. Out sweeps, in sweeps, patrol the area, aircraft in sight, near misses, cold and wet and a tiredness that crept up on you. The time spent in harbour was virtually to coal ship, collect stores and replacement sweeps, perhaps one night on the town and that would be it. "EARL ESSEX" will sail at 0600 in company with, blah ! blah ! and would begin all over again. The channel we cleared yesterday was mined during the night by E boats, so it needs to be done again today.

The horror and the futility of the war at sea has now receded into the history books, but the Navy of today still trains for the task of minesweeping, although it's all computerised and technical. Still I'm certain there would be room for hard bitten seamen to man ex-fishing trawlers, should the need arise. A new generation of ships and men but Harry Tate's for all that. §

Additional Training

by Simon Maddison

As the very nature of the job expects, divers are forever attempting to push their physical and mental capabilities to the limit. Endless challenges are provided in the Navy's catalogue of ambitious activities.

The latest popular challenge is an intensive 10 day Aircrew Survival Course at Seafield Park, Gosport. The most recent member of the branch to meet this challenge was AB(D) "Scouse" Vernon, who successfully completed the course in April.

Unavailable to comment at length, he did however stress that whilst he found the course as mentally and physically demanding as expected, it was the lack of food and supplies that provided the most challenging factor.

Too many cheesey-hammy-eggies at stand-easy, I expect!



● Diving Reporter
Simon Maddison

USN Exchange, San Diego

by "Buck" Taylor

The Billet for both a CPO(D) and an MCDO in Panama City lapsed in 1989. Lt Cdr Chris Sherman is in the new appointment in Washington DC in the East and I am attached to the Consolidated Divers Unit (CDU), in San Diego, California.

The main role of the unit is to support the 75 or more surface ships based at San Diego with repair and inspection operations. There are about 70 divers here of varying grades: from 2nd Class to Master Diver (plus some additional support personnel). Only 25 of the divers are permanently drafted: the remainder are loan-drafted from the locally-based support tenders

Usually there are 2 ten-man diving teams deployed daily in the harbour carrying out a wide variety of underwater tasks. My present job is the OIC/CPO to one of these teams. Despite the "fun in the sun" aspect of this draft, any prospective exchange candidates note that the working day starts at 0630 here and ends any time after 1530 - plus duties!

The 50ft work boat with permanently-installed air system supports 2 working divers and 1 standby diver with surface-supplied air and pneumos. The USN Mk1 is the rig used for most operations (it is almost identical to KMB Bandmask Mk 10). Bail-outs are not worn as the boats' air systems provide an alternative air supply and regulator, plus most diving is less than 60fsw (USN Diving Regulations).

The unit standard tasks include: Fixed-Pitch Propellor Change; Bow Sonar Dome Patch and Repair; Main Circulator Patching; Shaft

Wraps; Pit Sword Changeouts; "A" Bracket Epoxy Repair; Submarine In-Tank Ballast Removal (20 tons); Helicopter Salvage; Ship Dry-Docking Block Positioning; Bow Thruster Maintenance; Special Operations Support; Pre- and Post-Hull Cleaning surveys; Auxiliary Propulsion Unit Repair; Cofferdam Installation (2'x2" to 6'x3').

The US Navy has a regular requirement to seal their ships' hull openings in order to repair onboard pipework/valves. To this end, CDU has developed and perfected the use of various standard and custom-built cofferdams and patches. Locally-produced lightweight eductors, welded-aluminium (1/4") flat and box patches are in frequent use. The patches/cofferdams are retained in place by "J" Bolts with wing nuts and/or steel wire rope belly bands tensioned by a hand-operated wire puller (TIRFOR, UK). The seal is achieved with 1" foam rubber glued to a 3-4" wide sealing face. Small leaks are resolved with a home-made sealing compound, Bintski, or a 2-part epoxy, Splash Zone. The use of Shaft Wraps is particularly of interest.

Shaft Wraps

The shaft is sealed at the fairing or fairwater immediately aft of the Stern Tube, thus permitting the inspection or removal of the ship's stern gland seal (Syntron Seal, USN). Initially, the divers take rough measurements of the circumference of the shaft and the distance between the shaft and the fairing. A note is made of any deadlight or cooling water holes on the fairing and skeg. The surface crew then cut a suitable length of cordage, diameter to exceed the shaft/fairing

measurement, which is roll-wrapped in Bintski and tailed with two light cordage lines. This is then jammed hard up against and partially into the shaft/fairing gap. The two tails are then tied tight together, to form a large "O" seal. All deadlight holes except the lowest one are plugged with standard softwood DC plugs. An eductor with extension section tube is inserted into the lowest deadlight hole and is made fast; then all plug, eductor and fairing joints/cracks are sealed with Bintski (plus Splash Zone if Wrap is on overnight). The eductor is slowly energised from the ships' firemain (100 PSI) to drain the fairing and stern tube. A bleed or vent valve must be opened in Shaft Alley at the Gland Box to allow air into the stern tube void, otherwise the eductor will draw in and collapse the divers' "O" seal when all the water has been evacuated. N.B.: portable eductors are always immediately available inboard should a leak develop. As an additional safeguard against catastrophic flooding, all CDU eductors are fitted with check valves in case the fire main is inadvertently secured. The indication that the stern tube is dry is given by "white water" from the eductor discharge. This is a billowing discharge of white aerated water, often visible from the surface.

Detailed information has been sent to SofD staff to evaluate a possible application of USN underwater repair/husbandry techniques in the RN.

Have a really RAD (California-speak) day and happy surfing!

Diving Equipment Report

DEVELOPMENT OF AN MCM DIVING SET FOR THE '90s

by John Chapple

EXPERIMENTAL DIVING UNIT,
DEFENCE AND CIVIL INSTITUTE OF ENVIRONMENTAL MEDICINE,
DOWNSVIEW, TORONTO, CANADA.

● *Editor's Note: The following article is submitted by a Royal Navy exchange officer involved in the Diving Equipment Trials and Procurement process. His personal opinions, expressed below, do not necessarily reflect official MoD policy or opinion regarding any future Diving Equipment in the R.N.*

I arrived at DCIEM in June 89 and, as Diving Project Officer, inherited the responsibility, amongst other tasks, for the development of a replacement for DSSCCD, a subject dear to most Divers' hearts.

Personal Standpoint

The aim of this article is to highlight the salient points of the project to date and cast a glance to the future on both sides of the Atlantic. Acknowledgements go to my predecessor, Lieutenant Steve Marshall for the hard work that he put into this project to ensure its success.

I do not seek to question the need for an MCM and EOD diving capability in the RN nor to enter the debate over "Diver or ROV?". I take the standpoint that, however capable ROV or RCMDs equipment becomes, there will always be a need for manned intervention underwater. What is necessary is that our men be given the best, and perhaps most cost-effective, tools for the job whether they be divers or submersible operators or both. Whether this has happened in the past is immaterial. That it happens in the future is essential. In the Canadian Forces (C.F.) this meant that the limitations of our dear old CDBA, and latterly DSSCCD, were recognised by the Clearance Diving Branch in the late 1970's. The scope for further improvement of this grandfather of diving sets was assessed as poor. Owing to the increasing support costs, scarcity of spares and degree of manpower required to keep the equipment operational, coupled with serious concerns about health and safety, DCIEM embarked upon a programme to develop a mine-countermeasures breathing apparatus as a replacement for CDBA. In the interim DSSCCD was bought by the CF but a limit of

42 msw was placed on its use. Indeed it is so long since the CF Clearance Divers have used 32.5/67.5 O₂/N₂ gas that it has been deleted from the stores system.

Ambitious Development

The development programme was ambitious. It was intended to achieve the NATO target depth of 80 msw using a single design self-contained rebreather set. An initial development contract was placed with Nova Scotia Research Foundation, a Crown Corporation, to develop the initial diving set known as CUMA (for Canadian Underwater

Minecountermeasures Apparatus). In 1984 the project was reviewed and an important decision was made, to split the project into two distinct phases:

Phase One: Development of a 54 msw oxy-nitrogen set to replace the in-service CDBA.

Phase Two: Development of a new gas control circuit to allow the Phase 1 rig to be used to 81 msw using helium and oxygen.

The Phase One set eventually became known as the Canadian Clearance Diving Apparatus (CCDA) whilst the Phase Two variant evolved into Canadian Underwater Mine Apparatus (CUMA). To confuse all of us divers, the company that manufactures these sets also has a trade name for each, namely "SIVA 55" and "SIVA plus" respectively. "SIVA", pronounced "Shiva", is the Hindu god of war, I believe.

In 1985, Fullerton Sherwood Engineering Ltd (FSEL), a civilian firm, was contracted to develop these sets in conjunction with EDU, DCIEM. This ensured that virtually all the technical drawing, selection of materials and preproduction work, was undertaken by the company, leaving EDU staff free for testing and development. The technology and design specifications derived from the initial CUMA development were transferred to FSEL for implementation into a finished product. FSEL (of Toronto) is the sole manufacturer of the equipment and is licenced by the Canadian Department of National Defence.

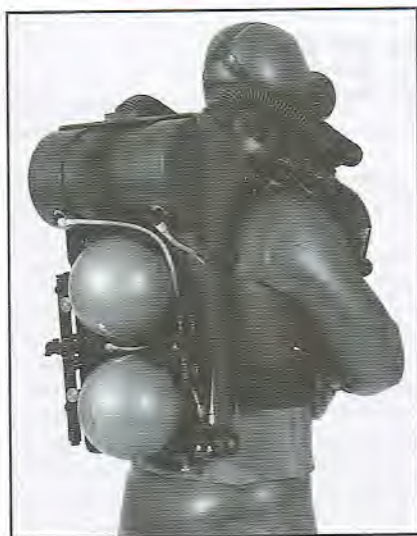
Canadian Kit

Canadian Clearance Diving Apparatus (CCDA) is a semi-closed circuit rebreather set which uses pure oxygen or the three standard oxy-nitrogen gas mixtures down to 54 msw. It is designed to modern standards of both engineering and life support and is straightforward to use and maintain (one of the principle aims throughout the development project). The set itself is "user friendly", consequently it does not have to be tested to destruction prior to each dive (unlike certain sets). Nor does the diver spend half his time on the job concentrating on whether or not his diving set is defective. Most of the standard operating procedures and deployment rules for the set are based on the drills for DSSCCD - to enable a swift introduction into service. To give some idea of capabilities, CCDA has an



● *Canadian Clearance Diving Apparatus (C.C.D.A.)*

Diving Equipment Report



● **Canadian C.C.D.A. (shown without Back Fairing)**

endurance of 120 minutes using 100% O₂ and 60/40 which reduces to 88 minutes on 32.5/67.5. The CO₂ canister carries a charge of soda-lime double that of DSSCCD and has been tested well beyond the 120 minute mark. There are two standards of manufacture; a standard training version and a non-magnetic warstock version. The CF will be getting both.

The first prototype CCDA was delivered to DCIEM in August 85. It underwent unmanned and manned testing in EDU's dive chambers, followed by field trials at Fleet Diving Unit (Pacific) in Victoria, British Columbia and a final operational evaluation at Fleet Diving Unit (Atlantic) in Halifax, Nova Scotia in late 87. The set also completed acoustic trials with the RN at Loch Goil, Scotland and magnetic trials at the USN EOD Technical Centre, Indian Head, Maryland, USA again both in 1987. After a number of minor delays and modifications resulting from these trials CCDA finally went into production in late '89 and will formally enter service with the Canadian Clearance Diving Branch on 1 July 1990: a mere five years after the start of development - this is a considerable achievement, especially since only two years of this were spent in writing the contract and nine months in production.

The Canadian CD Branch has been responsible for the development of this set, but "in-service" honours went to the Royal New Zealand Navy who bought some earlier models in 1988. The reports from their Clearance Divers have been positive to say the least. No prizes for guessing which set it replaced! As some of you may also know, ARE Alverstoke has been evaluating an early model of CCDA (SIVA 55) with FDU 3 for the past two years and these are continuing.

C.U.M.A. TRIALLED

Having successfully developed a modern and safe clearance diving set for 54 msw use, we

have moved on to Phase Two of the project - the more specialised requirements of deep clearance diving in the 54 - 81 msw range. Outwardly CUMA (or SIVA Plus) looks very similar to CCDA. This is intentional since the set makes use of the exact same semi-closed breathing loop (counterlung, mask, breathing tubes and CO₂ scrubber), but the gas supply system is of a completely different design: it uses separate supplies of pure oxygen and pure helium to provide the diver's breathing loop with a constant partial pressure of oxygen at all depths. This is done by combining a constant oxygen flow with an increasing diluent flow with depth, controlled by a ratio regulator built into the gas supply system. A neat system and one on which the successful operation of the set depends. The CUMA also has the advantage of a separate electronic diagnostics unit which monitors the P_{O2} of the gas being breathed by the diver. In his mask, at eye level, he has an LED which glows Red or Green to tell him whether the gas is within limits. Since CUMA uses advanced technology the preparation and maintenance requirements are considerably greater than for CCDA, which remains the equipment of choice for diving to 54 msw.

DCIEM has now conducted preliminary open-water trials with CUMA and the maximum depth of 81 msw was achieved at FDU(P) in Jan 89. We have three pre-production models in-house and are testing these on the West Coast in May 1990. In Feb 90 we conducted a manned dive series in the EDU chambers to validate a specific CUMA HeO₂ Decompression Table. The CUMA gas supply system is almost unique and, although USN Helium-Oxygen Partial Pressure Tables can be used with some modification, a more efficient and safer table is required for operational use. The target operating requirement for CUMA is a dive to 81 msw for a bottom time of 20 minutes with in water decompression. At present we are concentrating on surface decompression procedures with initial in-water decompression prior to the "pull" for Surface D.

Other components of the total CUMA system required to deploy a self-contained diver to these depths are still under development. These items include a supplementary heating system for the divers hands (after 45 minutes in 6 degrees C we all know how easy it is to

shut off valves!) and also a workable bailout. In summary, deep MCM diving is a reality.

THE WAY AHEAD

It is very easy to knock CDBA/DSSCCD when compared to more up-to-date equipment but let us not forget that CDBA has stood the test of time and has given sterling service over the years since the first model entered service in 1951. All designs become dated once they have reached the limit of development and this has happened in the case of CDBA. It is a salient point, that all replacement sets are either based on, or have learned from, the successes and failures of CDBA which, in its time, was a world leader. As a branch we can be proud of our association with it and the many operations achieved using it, especially when we take our families to see it in the museum. We also cannot forget the incidents and fatalities that have been engraved on our branch consciousness.

The future lies with a modern CD set of which there are but a few on the world market. Rather than attempt to develop our own at a time when budgets are being trimmed we have no viable alternative but to procure a "foreign" design if we wish to keep our Divers effective in one of their primary roles. To procure CCDA/SIVA 55 as our own replacement is the more obvious solution to the problem. To those who may object to a "foreign" designed set, I would point out that, ever since the project commenced at DCIEM, the RN has been closely involved with the development of the set with a succession of RN Project Officers: Lt Cdr Colin Dodd (85-87), Lt Steve Marshall (87-89) and lately myself.

Safe diving and happy hunting! §



Precise Navigation

LOST, OR JUST CONFUSED?

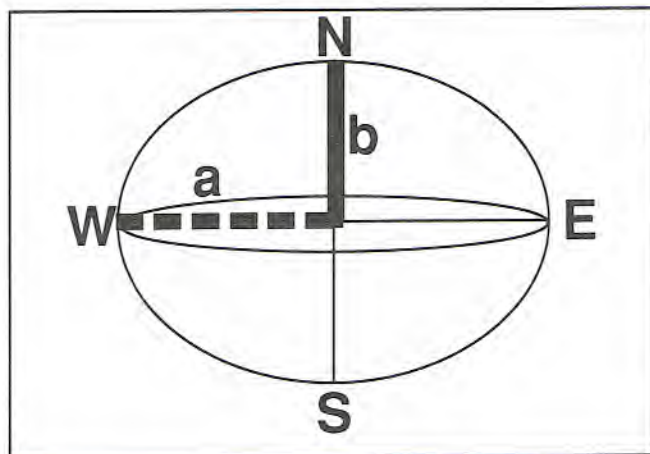
by Tony Silva

When determining a ships position, numerous Radio Fixing Aids (RFA) are available to the Service and have been for many years. The accuracy of these systems depends largely on the range from the transmitter, weather and upon the equipment itself: it may vary from 5 metres to 2 nautical miles. Yet, whether a Mine Countermeasures Vessel (MCMV), a Hydrographic Vessel or another craft conducting specific tasks, (e.g. leadthrough or diving jolly to locate lost treasure), navigation which offers the highest accuracy and constant repeatability must be obtained.

The most commonly known Precise Navigation Systems (PNS) are Hyperfix, Trisponder and Syledis. Although the operator's ability to competently use these systems is continuously improving, a full appreciation of their history and capabilities has not been disseminated. While corrective action has been taken to instruct all levels of Royal Naval personnel, on-the-job training is essential - especially to those seeking advancement or furthering their knowledge to increase the operational effectiveness of their vessel. **Therefore, this article is aimed at enlightening those who have shied away from the equipment for far too long.**

What Shape World?

It is commonly accepted that we live in one world but exactly where we are on this world is less well understood. As our planet is neither of regular shape, nor of uniform density, it's precise dimensions have been debated for hundreds of years and have still to be resolved. From Fig 1, it will be seen that the polar radius 'b' is less than the equatorial radius 'a'. Thus, the Earth may be considered as being flattened along its North-South axis. As the detailed irregularity is unknown throughout the globe, it is very difficult to perform mathematical calculations. Therefore, the necessity to introduce a mathematical model, that closely relates to the geoid, is produced by rotating an ellipse about its minor axis and is known as a SPHEROID. Comprehensive calculations can now be performed by the way that the geoid departs from this easily defined shape.



● Fig 1: The Oblate Spheroid

Spheroids

A number of spheroids are available throughout the world, but the most frequently used in MCM are:

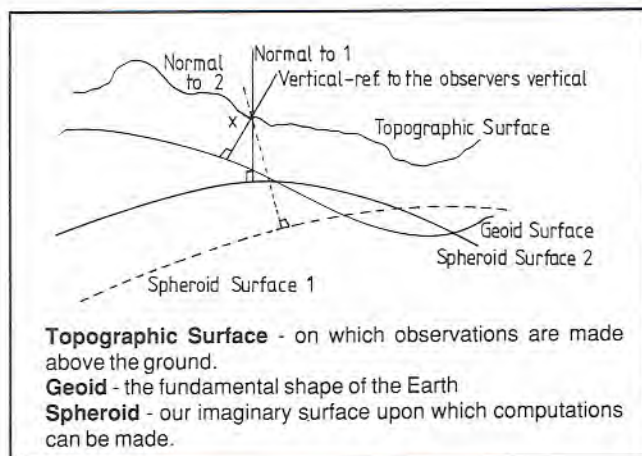
1. AIRY - whose datum is based on Ordnance Survey of Great Britain 1936 (OSGB-36) which has its origin at Herstmonceux, Sussex.
2. International 1924 whose datum is based on European datum 1950 (ED-50). This spheroid is used for the calculations of distances in the Admiralty Distance Tables and Ocean Passages for the world.

The parameters 'a' and 'b', usually expressed in metres, define the size and shape of each spheroid. To account for the flattening of the sphere, formula $f=(a-b)/a$ is introduced and expressed as a ratio of 'a'. Further calculations are required to assess the eccentricity of the spheroid - which will not be covered in this article.

Spheroid	Radius 'a'	Radius 'b'	Flattening
Airy	6377563m	6356257m	1/299.325
International	6378388m	6356912m	1/297

● Table 1: Spheroid Data

As seen at Table 1, the differences between the semi-minor and semi-major axes of two spheroids is 825 and 655 metres respectively. These distances are demonstrated more effectively at Fig 2. for, as seen, the topographical position of point x has remained fixed, but its geographical position has altered, depending on which spheroid data is in use. For absolute repeatable accuracy, it is essential to use the datum and spheroid upon which the system chains were designed and with which data was produced. To achieve this, the general maxim "Same in" "Same out" "Same used" must be applied, whether operating CAAIS, QX1, QX3(1) or QX3(3).



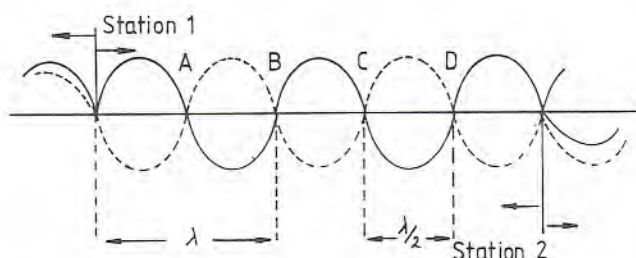
● Fig 2: Projection Onto A Spheroid From A Fixed Position

Electronic Position Fixing

Electronic positioning systems fall into three main groups:-

- a) Time Based Systems - measure the travel time of a signal from transmission to reception - Radar, Loran-C (Pulse/B).
- b) Phase Comparison Systems - measure the phase difference of a signal radiated from pairs of stations - Decca Navigation, Omega, Hyperfix.
- c) Independent - essentially measures travel times and ranges from satellites in known orbits - SATNAV (Transit), SINS, NAVSTAR (GPS)

Hyperfix, the most commonly used Precise Navigation System is available around the United Kingdom coast and is a Phase Comparison System. It operates on 2mhz in virtually the same way as Main Chain Decca. Each chain consists of a number (from 3 to 18) of transmitting stations. One station is generally referred to as the Prime or Station 1. Between a pair of transmitting stations a continuous wave is radiated eg: from Station 1 to Station 2 as shown below in Fig.3.



● Fig 3: Phase Comparison Of Signals

The transmission from Station 2 is phase-locked from Station 1 and, for a particular point in time, the transmission can be shown as a sine wave propagating in all directions. At points A, B, C, and D, the amplitude of both signals is zero. As time moves on, the signal from Station 1 increases in amplitude as it passes point 1, as does the signal from Station 2.

Transmissions are radiated in all directions in a series of circles of half-wavelength radii. These are drawn around each Station, the points of intersection of such circles form a HYPERBOLIC line of position of zero phase difference. Two frequencies are used, F1 and F2, which lie in the 1600 - 3400 khz band. In addition, frequencies are allocated such that F2 lies some 200khz below F1.

Latest Generation

Although the system in the receiver is able to show in which particular lane one is situated, it cannot directly indicate how many lanes there are between the receiver and the prime station (from which the lanes will be counted). However, the latest generation, Mode 4, was designed to overcome these problems and to achieve "Auto-Lock". This is accomplished by the chain transmitting stations radiating five frequencies.

The first transmission, F1, is the timing signal which synchronises all transmissions and receivers. The other four are mixed in various combinations to produce the various levels as lane identification a whole operation takes 1.4 seconds. These derived frequencies

effectively generate further HYPERBOLIC patterns with wavelengths and lane widths as follows:

		Effective Frequency	Wavelength	Lane width (between zero phase points)	
F1+50 Hz	-	F1-50 Hz	100 Hz	3000 Km	1500 Km
F2	-	F2-4 KHz	4 KHz	75 Km	37½ Km
F1+5 Hz	-	F2	200 KHz	1500 m	750 m
F1+50 Hz	-	F2	2000 KHz	150 m	75 m

Improved Skills

With a firm grasp of the basic theory of precise navigation, the operator will have a clearer understanding of the information contained in the relevant system publications. The making of data tapes and operation of the receiver will be clearer. Delays in commencing the ordered task (often due to ignorance of the system and human error, rather than the equipment) will be reduced. In addition, when the equipment does malfunction, an exact report can be forwarded, thus enabling swift rectification by the maintainers.

For many years it has been left to the individual to familiarise himself with the receiver and become a skilled operator. The only alternative was to find an onboard "expert" or squadron staff in order to improve your ships operational effectiveness. The very term "Precise Navigation" suggested to many operators the use of a sharper 2B pencil, coupled with rapid visual fixing rather than use of complex RFA's. Now, the individual may readily further his own knowledge of MCM PNS equipment and thereby prevent Precise Navigation forever being regarded as "someone else's problem" should it not work correctly. §



Main Feature

NEW C.I.S. FILM "IN THE CAN"

by George Turnbull

Despite the fact that the Combined Influence Sweep (CIS) has been with us for over ten years, the teaching of its components, deployment and recovery is still painstakingly depicted by MDDS instructors, using complicated Vu-graphs and a variety of coloured chalks on a black chalk-board. The CIS instructor is easily identifiable by his light covered of multi coloured chalk dust and maniacal grin that in previous years would have won him a place in Netley.

Clearly something had to be done to help the long-suffering instructors, whilst at the same time give the students the high standard of instruction to which we have all been accustomed. It was therefore decided to seek authorization to produce a professionally made movie which would meet all Service requirements. A Department called CS Rep (S) (who are the MOD's answer to Warner Brothers) was given the task of filming, with both yours truly and PO(MW) "Jim" HAWKINS being given the honour of acting as technical advisers. All arrangements were made by the Gunwharf Film Liaison Officer and a helicopter and fleet tender were put at our disposal.

No Problems...

HMS BROCKLESBY was nominated as the host ship and the chosen area of operation was the Med, running from Gibraltar Naval Base. "Everything is arranged", they said. "No problems", they said. "Off you go and have great time", they said. Off we went, in company with the MCMG course which was also to take place in Gibraltar. The great time started with a flight in an RAF C130 HERCULES, which is an experience on its own, but anything is endurable when the promise of a sunnier climate is at the other end! WRONG! Yes you guessed, lashing down with rain: "Worst storm we've had in thirty years". Drat! The weather improved for most of the MCMG time and I became quite hopeful for the film-making. The day came for the arrival of the film crew and yes, you've guessed it again. Lashing down with rain: "Worst storm we've had for thirty one years". (Not to worry, things looked a little brighter that evening following the results of the hospitality match vs. the film crew: RN 1 - Film Crew 0).

Rolling

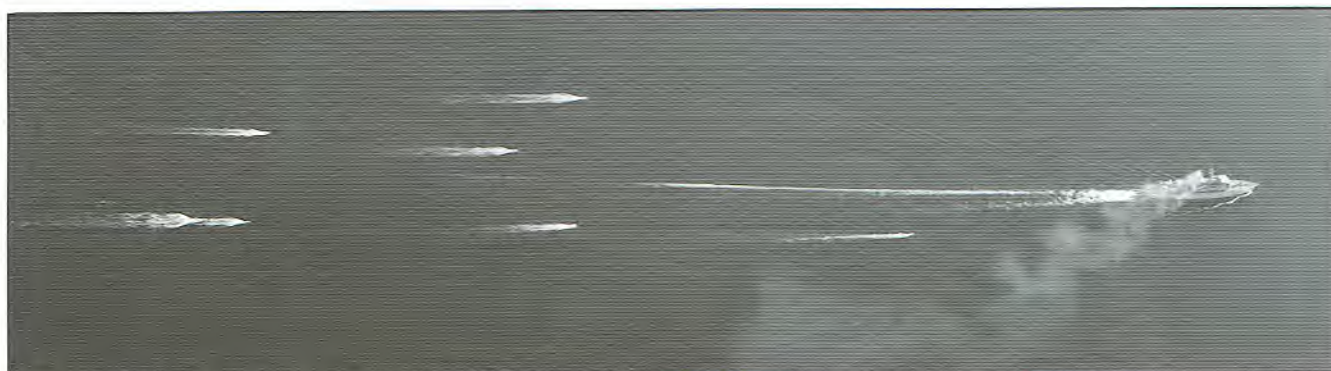
The weather on the first day of filming proved to be rather dismal and overcast, so the decision was made to remain alongside and complete as many of the interior shots as possible. These were to include the OOW, Ops Room, and SCC.

"Piece of cake," we all thought, "it will be over in a couple of hours". What we were not prepared for was the amount of time taken just setting up for each shot. It came as something of a surprise to find



● *BROCK's Film Stars And Extras*

ourselves still there "rolling them" at 2100. The next day saw us at sea by 0800 to begin the shooting of what was to become a daily grind of repetition. The sweep deck crew, ably headed by PO(MW) "BRAD" DOYLE (RAN) were dressed in the current Action Working Dress, white overalls and anti-flash and were put to task. It must be said at this point that the weather had improved dramatically and it was really quite hot. The team did well to maintain their ever present good humour and co-operation throughout. Over the following nine days the CIS was deployed inch by inch, with every shackle, pendant and grip painstakingly filmed from a variety of angles. Officers of the watch were kept on their toes by trying to manoeuvre the ship to ensure the shadows were in the same place on the deck throughout the day, (which I am delighted to say they managed to achieve for most of the time). The first real problem came on day five, when the previously-arranged Fleet Tender was called for. "What Fleet Tender?" asked FO Gib's A/SOO. What followed was an hour of fast talking by me and some frantic phone calls, backed up with promises of liquid refreshments, courtesy of the film crew. Problem solved. Next problem was the helicopter, which went U/S on the day it was required. BROCKLESBY had streamed CIS early on and then spent the rest of the day steaming around the Med awaiting the repair of the sick "petrol pigeon". It eventually appeared on the scene at approximately 1700 on that day and the overhead shots were completed. The recovery of the kit was completed by approx 2100.



● *BROCKLESBY - "Showing how to do it"*

Main Feature

In the Can

Day nine saw a fairly "knackered" sweepdeck crew who were beginning to look quite anaemic due to the constant wearing of full Action Working Dress. I'm sure the only thing that kept them going was the thought of their promised return "hospitality match" vs. the film crew. It was with relief and delight when the Directors did utter those immortal words: "Thank you Gentlemen. **It's in the can**".

I would at this point like to say a big thankyou to MCM 4 staff for the support given to us, without which our task would have been impossible, and in particular to CPO(MW) "DIXIE" Dean who acted as an unpaid chauffeur and general shore-side organiser. His help was invaluable, but I cannot understand why he kept turning up in make up, especially when the camera's were rolling?! Thanks Mate.

The first rushes were viewed in February and the BROCKLESBY's team will be delighted to hear that they are all pretty good and the production was considered to be great success. The acting was most professional and those who had speaking parts came over really well, even the Australian!

Well done all and many thanks for your support.

P.S. Congrats, to BROCK's four LS(MW) who were all successful in their attempt at the recent WPE.

P.P.S. I understand that there is talk of producing further instructional films for Short Scope Buoys and Mk. 2 Danbuoys. Filming will be in the Gibraltar areas sometime around the middle of the year! Volunteers form up on me.

Happy and safe sweeping.

MINEWARFARE PICTURE QUIZ



Q. Spot the Australian (Clue: Who else would wear a "Woolly-Pully" Mid-Summer, Mid-Med?)

A. See Page 29.

Imitation is the Sincerest Form of Flattery

Intermarine USA was formed in 1987 to produce a new class of GRP Minehunter for the US Navy. Around 17 Osprey Class vessels are scheduled for production. These warships will be based on the Lerici Class vessels (but bigger, of course!).

NATO News

“M.O.S.T.” INAUGURATION

by Captain D.B. Sluijter RNIN, Director, EGUERMIN

The official inauguration of the Mine Countermeasures Vessels Operational Sea Training (M.O.S.T.) took place on 21 February 1990 at the Ostend Naval Base, Belgium. Commander in Chief Channel (CINCHAN), Admiral Sir Benjamin Bathurst KCB, attended this ceremony as the guest of honour.

After a first evaluation in Dec 89/Jan 90 the MOST will now serve up to 12 BE and NL units in 1990. From 1991 onwards, the MOST will be open for other NATO units and since the need for the MOST arose from STANAVFORCHAN, it is expected that units assigned to the Force will first have to pass the MOST before joining. Although MOST is BE-NL binational it has its NATO flavour and surely is unique within the Alliance.



● CINCHAN unveils the MOST nameplate



● The MOST Staff - Red Devils, not Green Perils

The establishment of the MOST was initiated by the Channel Committee based on the findings in the Standing Naval Force Channel (STANAVFORCHAN) that, similar to the training of frigates in Portland UK, there was an urgent need to provide for a final training and grading of MCMV's up to NATO readiness standards, before joining the force. The Belgian-Netherlands Minewarfare School EGUERMIN in Ostend was tasked to set up this weapon and safety training facility. The MOST has now become one of the major responsibilities of the school and since October 1989, the first units (one BE and two NL Tripartite Class minehunters and one NL minesweeper) have completed this two-week intensive training period.

THE BE-NL MW SCHOOL, EGUERMIN

As a result of a bilateral agreement signed on 17 May 1965 between Belgium and the Netherlands, all training in minewarfare for the two countries is concentrated in the joint BE-NL Minewarfare School "EGUERMIN".

EGUERMIN is a truly integrated binational school on a 50/50 cost and personnel sharing basis. The Director of the school is responsible to the Chiefs of Staff of the Belgian and the Royal Netherlands Navies.

The Director of the school controls three departments : The Department of Instruction and Training, The Department of Mine Countermeasures Vessels Operational Sea Training (MOST) and the Department of Administration and Finance.

Although the majority of the students are of Belgian or Netherlands nationality the school is frequented by the students of all fourteen seagoing NATO nations, representing approximately 25% of the 1000-1200 students visiting the school annually. The school is proud to have established a name in Minewarfare instruction and training and is keen to further improve its reputation.



● Heavy Smoking being dealt with on the bridge of BNS IRIS

Reference Supplement

FLEET TEMPORARY MEMORANDA

MW / DIVING / SEAMANSHIP 1989

- 10/89 RAS COMMODITY BATS
 11/89 SUPPLY OF SIGNAL FLAGS AND ENSIGNS
 27/89 SENIOR RATES DIVISIONAL COURSES - RNDMS
 35/89 DAILY AND WEEKLY INSPECTIONS (ROUNDS) IN HM SHIPS
 45/89 86g CO2 CYLINDERS - ASSAULT TROOP LIFEJACKETS
 47/89 WARSHIP REPLENISHMENT STATION DESIGNATORS
 48/89 LIGHT JACKSTAY RIG
 49/89 ASTERN FUELING - RECEIVING SHIP - NATO B COUPLINGS END FITTINGS
 50/89 USE OF BLUE OVERALLS OR BLUE UNDERSUITS FOR DIVING IN THE ARABIAN GULF
 51/89 HEAT STRESS - CLOTHING AND WORK SCHEDULES
 52/89 ANTI FLASH AND NBC CLOTHING
 62/89 SNAME STAFF OFFICE
 70/89 NEIL ROBINSON STRETCHER
 71/89 OPERATION OF FLOODING AND SPRAYING SYSTEMS AT NBCD STATE 1 AND 2
 73/89 USE AND DURATION OF WATER / AFF SPRAY SYSTEMS
 78/89 RED TAPE CORRESPONDENCE
 80/89 INTRO OF MARINER OUTBOARD ENGINES
 82/89 RATS - REPAIR AND MODERNISATION DURING REFIT
 84/89 REVISED SHIPS LOG INTRODUCTION
 95/89 LATE ENTRY INTO THE DIVER SUB BRANCH
 96/89 BEDDING IN HM SHIPS
 97/89 COMPUTER SECURITY
 100/89 N1 SMOKE GENERATORS - SAFETY REQUIREMENTS
 101/89 S2022's LIFESAVING AND SEAMANSHIP EQUIPMENT
 103/89 SURVIVAL SUIT POUCH
 117/89 RAS - FIXED NATO LONG LINKS
 128/89 CONTINUATION DIVING TRAINING HORSEA ISLAND
 130/89 MMF LIGHT JACKSTAY - INHAULS AND OUTHAULS - WELLING HOOKS
 136/89 BOATSWAINS YEOMAN / NILE COURSES
 137/89 CBM PJT COURSES FOR 1990
 139/89 GEMINI / RIB COURSES FOR 1990
 140/89 FOAM / WATER FIXED FIREFIGHTING HOSE REELS
 141/89 INTRO INTO SERVICE OF NBC SUIT NO1 MK4
 154/89 STANDARD SHIP DESIGNATORS
 156/89 CAPABILITIES OF BOATS USED AS SEABOATS
 165/89 INTRODUCTION OF WATCHKEEPING CERTIFICATES
 168/89 FLEET ARMING OF PERSONNEL - SSBN/FF/DD AND ABOVE
 169/89 ROA - LEGAL EXPENSES FOR HOUSE SALE AND PURCHASE
 175/89 NAV's YEO COURSES
 176/89 SSEL SUPERVISOR - TASK BOOK TRAINING
 178/89 NBCD QUAL - ADVANCEMENT TO LEADING RATE
 179/89 SOC's - PUBLICATIONS
 182/89 OPERATION OF SMOKE CURTAINS
 183/89 SAFEGUARD PROCEDURE
 186/89 PAINTING OF BOLLARDS , WINCHES AND CAPSTANS
 187/89 TAULRIT SPLICING
 186/89 RFA FUEL HOSE ARRANGEMENTS
 194/89 SUBSISTANCE IN THE GULF - VISITORS
 200/89 RAFT SERVICING CERTIFICATE
 201/89 RAS - REMOVAL OF INTERMEDIATE LINK AND AS A REPLACEMENT FOR RIGGING SLIP
 219/89 MEDICAL FITNESS FOR SHIPS DIVERS COURSES
 222/89 SEA SURVIVAL COURSES TRAINING FEEDBACK
 224/89 S10 RESPIRATOR AND CANNISTERS - ISSUES
 228/89 CARGO NETS - SWR AND CORDAGE
 236/89 RALEIGH SEAMANSHIP TRAINING FACILITIES
 248/89 STANDING SEA FIRST AID PARTY
 249/89 FIRST AIDER IN THE DUTY WATCH
 254/89 PAINT SCHEMES - INTERIOR ASH GREY
 276/89 LIGHTWEIGHT TRANSPORT STRETCHER
 277/89 TRAINING OF RELIEF CLEANSING STATION CREWS
 281/89 RAS - ASTERN / ABEAM FUELLING - HANGING PENNANTS
 282/89 HYPERFIX CHAINS , OPERATION AND MAINTENANCE ROUTINES
 286/89 ENTRY INTO THE SEAMAN SUB BRANCH
 304/89 SHIPS LOGS CUSTODY INSPECTION AND DISPOSAL
 308/89 SOW ONE AND TWO AMN RIGS RATIONALISATION
 309/89 TOWING HAWSERS , TOWING PENNANTS USE OF STRESS LINES
 313/89 SURVIVAL AND SAFETY EQUIPMENT MAINTENANCE SUPERVISOR
 314/89 SUIT SURVIVAL - SERVICING
 315/89 RAS REFUELLING - ROUGH WEATHER DISENGAGING
 317/89 RETENTION OF NBC SUITS FOR TRAINING SERIALS
 319/89 LSSA EXTENSION OF REFITS
 324/89 NBCD 16 COURSES - LIGHT RESCUE TEAMS
 326/89 RETURN OF EMPTY PALNETS DURING VERTREP
 337/89 CLEANSING STATION TRAYS
 338/89 HDLJ's MK 1,2,3 OPERATION
 247/89 RULE OF THE ROAD SOUND SIGNALS
 349/89 DAVIT PURCHASE WIRES
 350/89 RAS. INTRO OF JACKSTAY GRIPPER
 351/89 LARNE TARGET POLYESTER TOWING HAWSER
 353/89 DRAFTING PREFERENCE CARDS
 354/89 SHIPS STANDING ORDERS - SIGNATURE CONTROL
 355/89 BRIDGE RECORD OF WHEEL AND ENGINE ORDERS
 356/89 CHIEF BOSUNS MATE REVISION OF COMPLIMENT
 365/89 RN MOBILE SEA SURVIVAL CLASSROOM - PROGRAMME FOR 1990
 375/89 MCMV's - DEGAUSSING
 376/89 GENERAL SERVICE LIFEJACKETS - MINOR DEFECTS
 380/89 SECURITY TRAINING AND EDUCATION
 381/89 UNDER-VEHICLE EXPLOSIVE DEVICE DETECTOR
 382/89 SECURITY ACCOUNTING FOR DOCUMENTS AND SIGNALS
 394/89 MODE 4 HYPERFIX MODIFICATIONS
 396/89 MINE CLEARANCE GEMINI TOWING BRIDLE
 398/89 MK 3 / 3A / 4 NBC SUIT DRESSING AND UNDRRESSING ROUTINES
 399/89 TAG-OUT SYSTEMS IN SURFACE SHIPS

MW / SEAMANSHIP / NILE /NBCD 1990

- 003/90 POSSESSION OF IMITATION FIREARMS AND STUN GUNS
 010/90 ANNUAL SEAMANSHIP SEMINAR AND AGM
 016/90 SECURITY ARRANGEMENTS FOR PERSONAL COMPUTERS
 018/90 COMMAND REFRESHER COURSES AND EXAMINATIONS 90/91
 020/90 SHIPS HUSBANDRY ROADSHOW
 028/90 SHIPS DIVING TEAMS
 029/90 MONITORING OF DIVING AND DEMOLITIONS STANDARDS
 047/90 DEFENCE AGAINST CHEMICAL ATTACK - POSTERS
 048/90 S10 HAVERSACK CARD
 049/90 FIRES IN SHIPS , S/M's, RFA's JUL - DEC 89
 052/90 RAS - PROBE REFUELLING REMATING LINE
 054/90 USE OF OPERATIONAL SIC's ON OPDEF SIGNALS
 060/90 DIVING SAFETY MEMORANDA IN FORCE

Reference Supplement

DEFENCE COUNCIL INSTRUCTIONS

1989

DCI (RN)

- 10/89 REGISTRATION OF SERVICE VOTERS - NEW REG FORM
- 11/89 BLUE LINERS
- 14/89 LS AND GC MEDALS
- 21/89 ALLOWANCE OF DC TIMBER FOR TRAINING
- 55/89 HEALTH AND SAFETY CO-ORD COMMITTEE
- 62/89 CONDITIONS OF ENTRY TO CAREERS SERVICE
- 74/89 TRANSFER OF ARMAMANT STORES TO SUPPLY OFFICER
- 83/89 INTRO OF S33OC FOR DEFECTIVE CLOTHING
- 89/89 COURSES AT SMOPS
- 101/89 STORES - CLOTHING ISSUE PRICES
- 103/89 2OE SELECTION BOARD MEETINGS
- 109/89 NBCD MARKINGS - CLEANSING STATIONS - GASTIGHT MARKINGS
- 120/89 HEALTH AND SAFETY DIVERS AT WORK REGS 1981
- 131/89 UNIFORM - REVIEW OF CURRENT PROGRAMME IMPROVEMENTS
- 132/89 STAINLESS STEEL ID DISCS
- 153/89 INTRO OF PIPE CLAMPS FOR DC AND GENERAL USE
- 168/89 INTRO OF NEW LIGHT GREY PAINT FINISHING
- 71/89 JOINT SERVICE DCI: GENERAL SERVICE MEDAL AWARD FOR SERVICE IN THE GULF
- 172/89 FIRES AND FIRE LOSSES
- 182/89 SQUADRON TRANSFER OF COTT. AND ATHE.
- 184/89 OPERATIONS BRANCH WPE DATES FOR 1990
- 202/89 SHIPS DIVERS COURSES 1990
- 203/89 INTRO INTO SERVICE OF SONAR TYPE 193M MOD 1
- 212/89 INTRO INTO THE SERVICE OF CAMS
- 218/89 GSM FOR GULF OF SUEZ MINE CLEARANCE
- 221/89 CLOSURE OF HMS RALEIGH LEADERSHIP SCHOOL
- 223/89 REVISION OF QRRN's BR2
- 237/89 INTRO INTO THE SERVICE OF NAUTIS COMMAND AND CONTROL SYSTEM
- 256/89 GSM - ISSUE OF THE GULF CLASP
- 262/89 REDUCTION OF SHIPS HUSBANDRY TASKS
- 281/89 HMS ROYAL ARTHUR LEADERSHIP COURSES 1990/91
- 310/89 NILE COURSES 1990
- 311/89 INTRO OF PIPE CLAMPS
- 321/89 MCDO - APTITUDE TESTS 1990
- 336/89 DRIVING COURSES 1990
- 342/89 DIVISIONAL MANAGEMENT COURSES
- 346/89 SHIPS DIVERS - ENHANCEMENT OF CAPABILITY AND CESSATION OF WAIVER FOR JOINT SERVICES ADVENTUROUS TRAINING SUB AQUA DIVING

DCI (GEN)

- 149/89 TESTING OF ANCHORS AND CABLES
- 169/89 GENERAL SERVICE LIFEJACKETS MK3 RETAINER

1990

DCI (RN)

- 12/90 RATINGS MEDICALLY UNFIT FOR POLC / LRLC NEW PROCEDURE
- 15/90 NAVAL BASE COMMANDER PORTLAND
- 19/90 VISITS TO CENTURION
- 26/90 ADVANCE INFO ON CHANGES IN RESPONSIBILITIES OF THOSE INVOLVED WITH EXPLOSIVE STORES
- 27/90 2OE - 1990 SELECTION BOARD ARRANGEMENTS
- 32/90 SMOKE GENERATOR - GST N6 MK 1 - INTRO INTO SERVICE
- 48/90 GSM - GULF - ELIGIBILITY
- 50/90 REVISED INSTRUCTIONS - ID DISCS
- 53/90 INTRO OF ASSAULT TROOP LIFEJACKETS MK 3
- 54/90 INTRO OF HDLJ MK 3

DCI (GEN)

- 3/90 POSTAL BOMBS
- 5/90 USE OF FACSIMILE MACHINES - SECURITY
- 7/90 UNIT IDENTITY NUMBERS

Reference Supplement

COMMON WEAK AREAS - MCMVs UNDERGOING O.S.T.

by CST to COMMW

MINEWARFARE

Subject	Priority	Details	Percentage Incidence	Action
<u>General</u>				
PPMS	1	Dress: poor awareness of differing dress requirement with different mine threat colour states	99%	ALL
WT Integrity	1	LAX DC patrols and poor control of MBLO tallies	80%	ALL
<u>Minehunting</u>				
Sonar 193M Mod1	1	MHD operating drills	85%	MWO/MHD
Sonar 193/193M	1	Classification Procedures	85%	MWO/MHD
SCC	1	a. Wrong interpretation of information gathered b. Poor dissemination of results of ops room teams	80% 95%	MWO/MHD MWO/MHD
QX3 (3)	1	Sonar interfacing needs to be ratified	100%	
<u>Minesweeping</u>				
KOMs	1	Shackles to be checked prior to deployment	60%	SDD
ACORN Grip	1	Grips need to be removed on completion of sweeping not to be left for more than 24 hrs		

DIVING

Subject	Priority	Details	Percentage Incidence	Action
Diving Documentation	1	Documentation with information pertaining to diving is not reaching Diving Supervisors	85%	DIVO

Reference Supplement

I OF D "HOT TIPS"

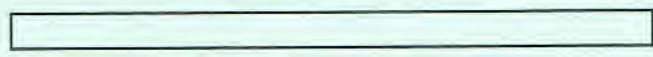
by Scouse Kidman

Since becoming Inspector Clearance Diving in November 1989, I have conducted 5 Clearance Diving Unit inspections, which have all achieved satisfactory assessments. Although standards appear satisfactory, there are always areas for improvement. Therefore, I intend to highlight areas identified in inspections that need attention by all Diving Unit members. In this edition, I will cover Transport Regulations.

During the inspections I have conducted so far, I have been concerned with the lack of knowledge that unit drivers appear to have relating to the Joint Service Road Transport Regulations (JSP 341). This JSP contains the regulations which govern all aspects of transport from the control of the vehicles to the licensing of drivers. The sections that drivers need to pay particular attention to are Chapters 8 and 9.



"...responsibility rests with the individual who is driving..."



Chapter 8 gives the drivers' orders and responsibilities and points out that under civil law, the responsibility for ensuring that a vehicle driven on public roads is roadworthy rests with the individual who is actually driving. This means **you** and there are no exemptions for military vehicles.

When driving a service vehicle, failure to comply with civil law will render you liable to prosecution and you will have to pay out of your own pocket and may even lose your civilian licence.

A mention about speed limits - the attachment of a trailer to a vehicle may impose a lower speed limit, so check before you proceed. Emergency vehicles such as EOD vehicles may exceed the speed limit only in circumstances when observance of the limits, signals and signs would hinder the use of their vehicles in their emergency function. National speed limits are to be exceeded and traffic warning signs are to be disregarded only in the most extreme emergency. Another point to keep in mind when you have a need to exceed the speed limit is the manufacturer's specifications of tyres, the max rating of landrover tyres is Avon 81mph, Michelin 75mph. Above these speeds, the probability of a blow out is real.

Chapter 9 deals with safety and gives information to the driver about hazardous cargoes and the safe loading of vehicles, amongst other things. The Control of Substances Hazardous to Health Regulations known as COSHH were introduced in 1988 and require all vehicles carrying hazardous materials to carry the appropriate TREM cards. Compressed Air, Oxygen etc are all hazardous materials. Therefore, all diving equipment carried in vehicles requires COSHH forms. Units requiring TREM cards can obtain them from their local gas stores within the dockyards or from the Inspectorate.

This is just a brief outline of some of the legal requirements which must be met by military drivers. Remember, it is your civilian licence that is at stake every time you jump into one of your unit vehicles, **so, if in doubt, ask.**

Safe driving. §

DSSCCD UPDATE

By Mo Crang,
DO2,

MDDS Faculty of Smops

As you are all aware, Diver's Set Self Contained Clearance Diving (DSSCCD) diving has been suspended since December 1989, due to an unfortunate accident involving an HP oxygen explosion.

To understand the problem, it must be remembered that oxygen, when on its own, does not burn but when at pressure of 200 bars, temperatures of over 1000 degrees Celsius can be achieved by the opening of valves and the subsequent down stream restriction caused by closed valves or regulators. These temperatures are sufficient to ignite the metal of gas pipework! Any contamination present, especially hydrocarbons, such as oils or grease, will greatly increase the risk of explosion.

This risk has led to a need to revise training and operational procedures in respect of oxygen cleanliness and hygiene. The importance of maintaining a diver's gas breathing and testing system in a clean, operable and certifiable condition cannot be over-stressed.

To achieve the standards required it has been decided that MDDS will maintain all its oxygen equipment in two specialized clean rooms. These clean rooms and equipment have cost approximately £15,000 each and are now operational.

Such measures will achieve two main objectives:-

1. The current drafting and appointing nightmare (caused by MDDS not being able to qualify divers) will revert to the normal bad dream.
2. Minimum oxygen maintenance procedures can be identified and, following experience in MDDS, will enable standards and procedures to be reviewed, tested and promulgated to the Fleet.

It is expected that the new procedures will be available to the Fleet by September 1990. §

Editor's Note: It has been suggested that the Supplement in the next edition of this magazine be that of "Check-Off Lists".

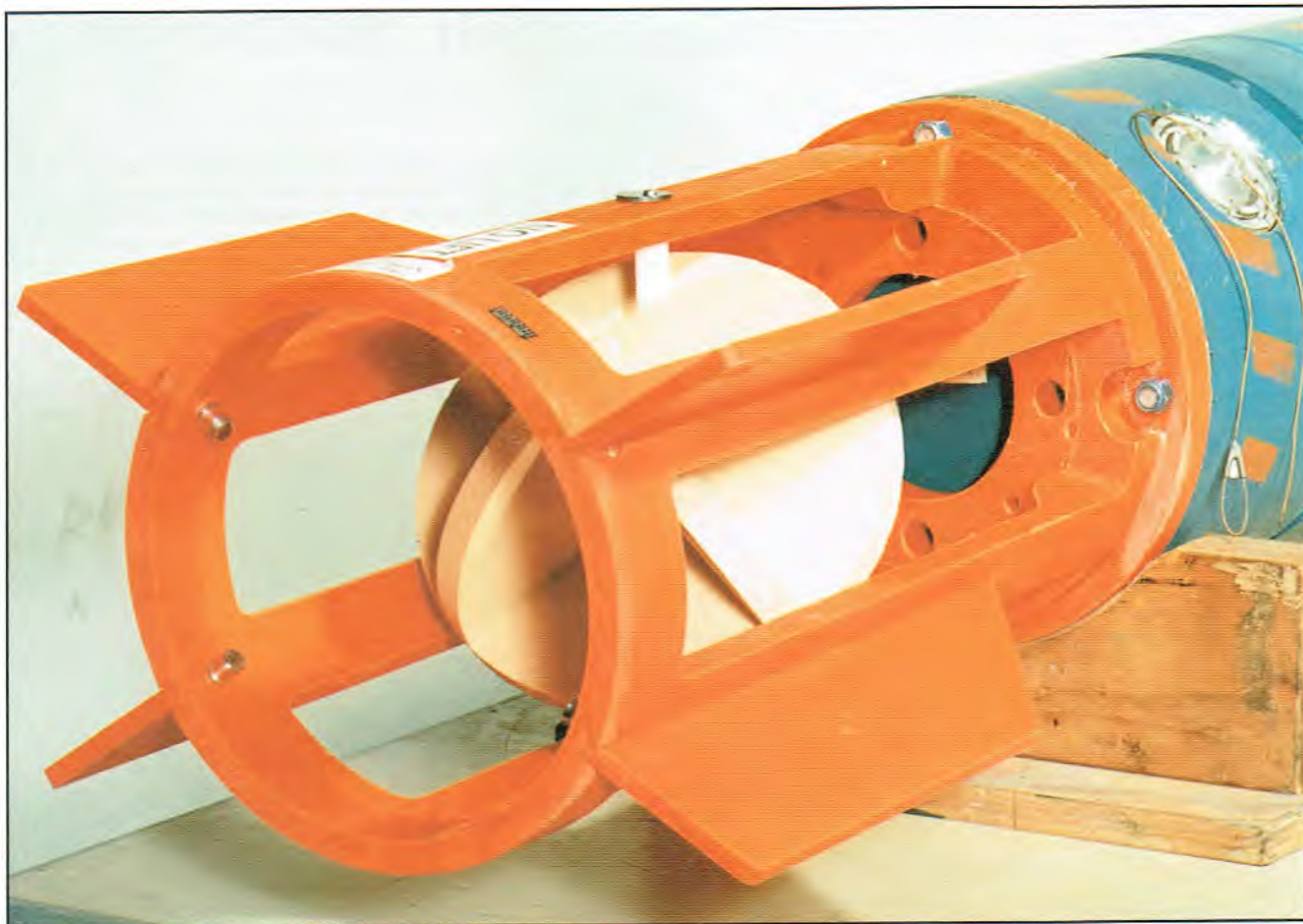
The proposed nature would be that of local lists, not printed in any BR or CB, but regarded as useful or even essential to members of the Minewarfare and Diving communities.

*A few examples that have been forwarded by the diving school are: What do **you** put in **your** Diving Supervisors det box?*

*What are the spares that **you** carry in **your** gemini box?*

The need for individual preference will always come first and the aim is not to standardise any such list, merely to provide either food for thought for old salts or handy hints for novices. Answers on a postcard please, to the usual address.

Minewarfare Update



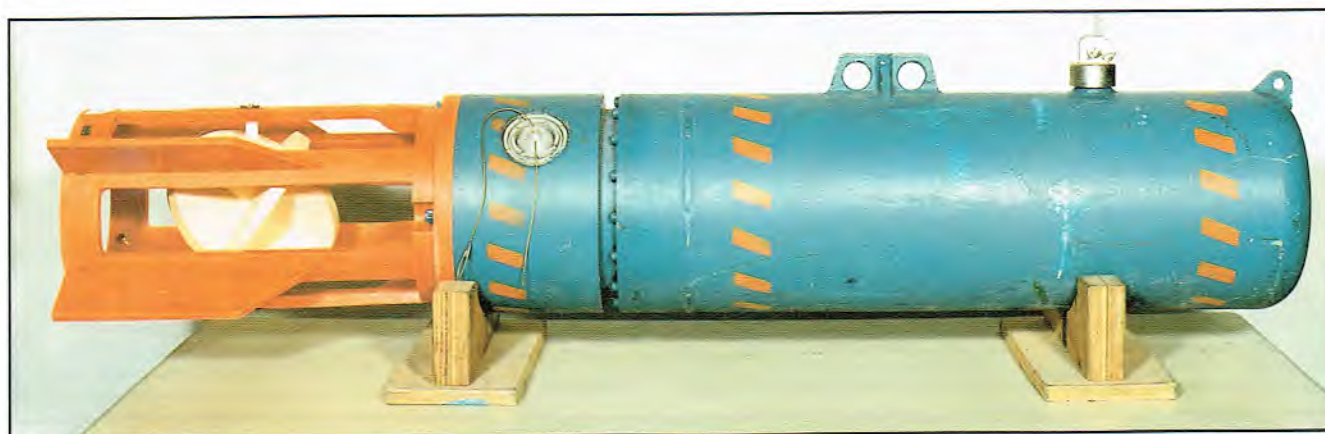
The latest addition/amendment to the Mine Disposal outfit is the introduction of a new tail for the Mine Disposal Weapon (MDW). Constructed of man-made materials, it is lighter and more durable than the current version. The centre of gravity has changed somewhat, but not enough to affect handling procedures.

The encapsulation of a polystyrene sonar reflector has improved detection capabilities, which will hopefully bring a ray of joy to Gemini Cox'ns who must despair at the cry of "I have lost you, return to ship".

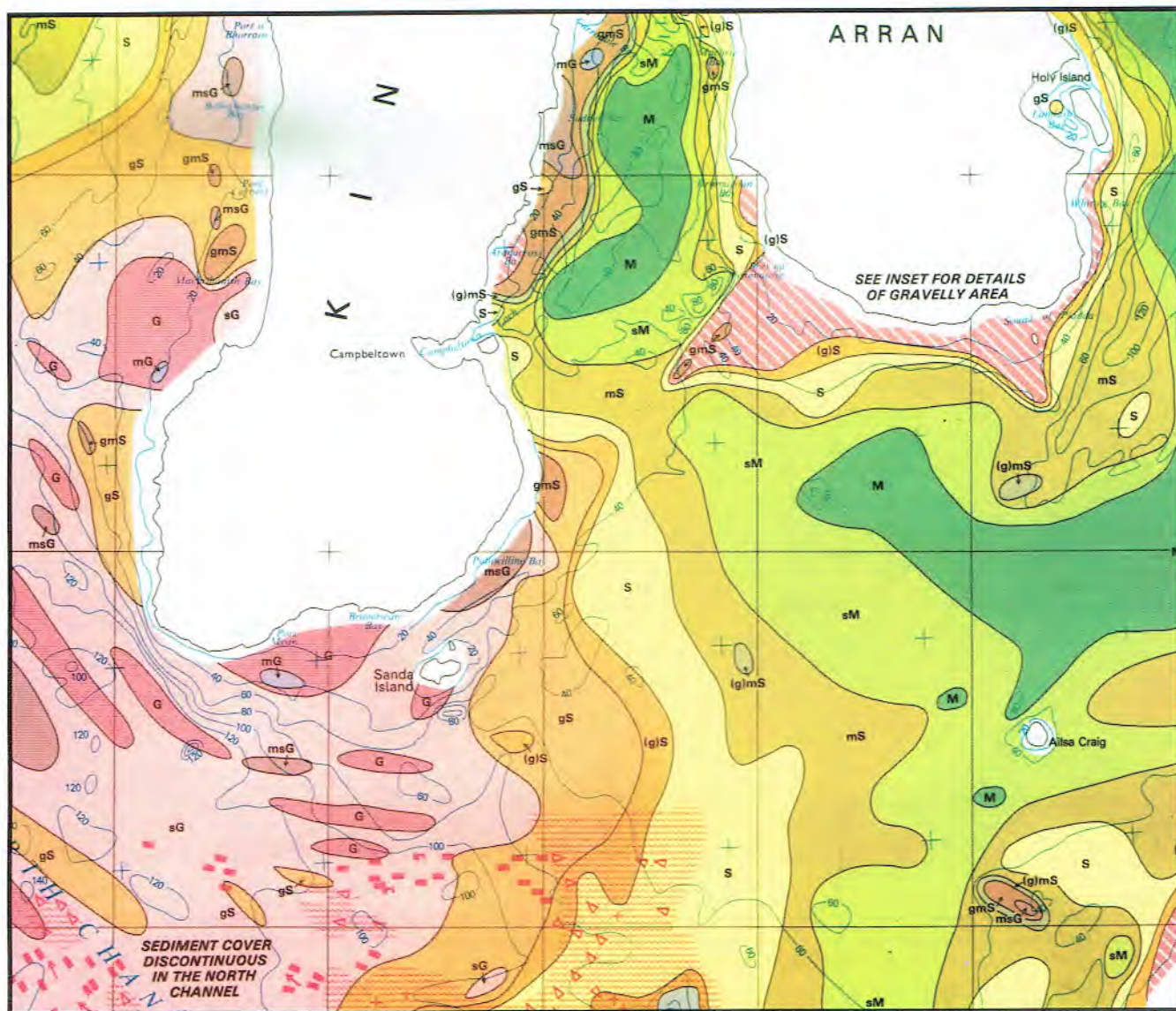
1400 tails have been purchased and will be distributed to units on completion of minor modifications. There is currently some concern regarding the stowage of synthetic materials in magazines, however DGUW(N) are confident that these problems will be overcome in the near future.

My one concern is "colour". I wonder how long it will be before a DCI is issued authorising holders of MDW outfits to draw tins of "DRAB OLIVE-GREEN PAINT"?!

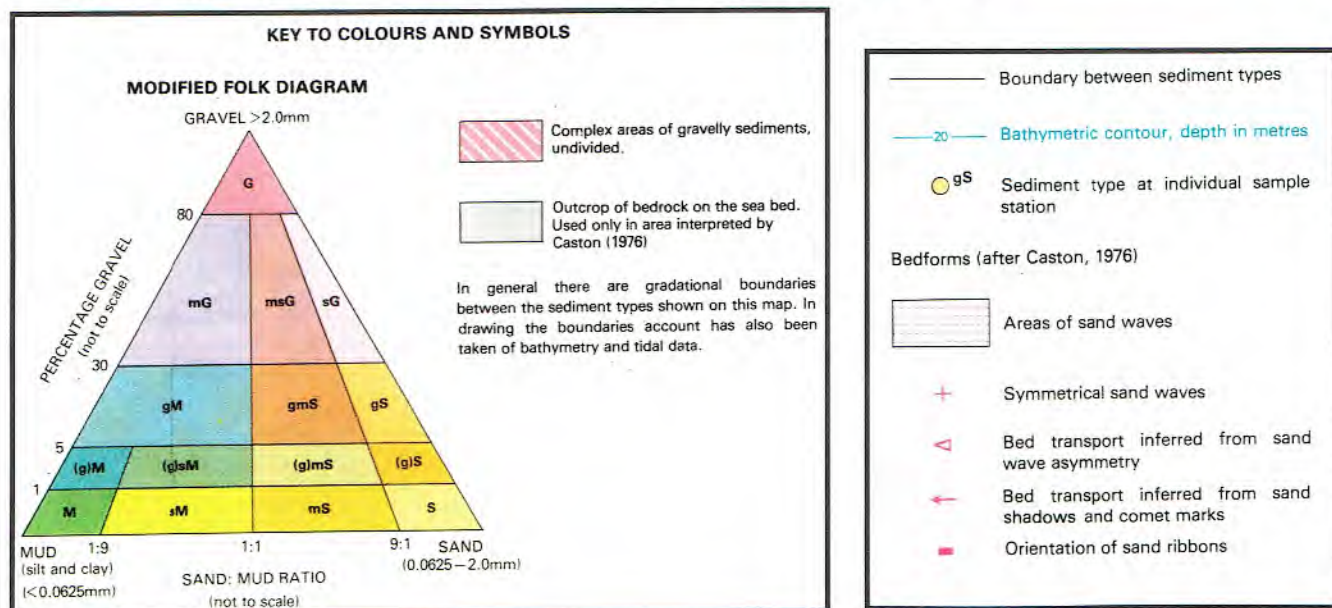
by George Turnbull



Oceanography



● Fig 1 (Above): BGS Sea Bed Sediment Chart of the Firth of Clyde (75% of True Size)



A MINE OF INFORMATION?

by Roland Rogers

British Geological Survey Charts of the Sea Bed Sediments and Quaternary Geology show the position in contour form of the unconsolidated sediments of the UK continental shelf within the UK Territorial Sea Area (12 nm). The charts are based on an sample of sediment taken from the top 15cm of the sea bed. See Figure 1 at left.

The sediments are classified according to a modified version of a scheme proposed by Folk in 1954. The charts also depict bottom contours based on Hydrographic Department data as well as tidal current data and bedform distribution. An estimation of sediment thickness and certain acoustic parameters is given for the areas of the sea bed on the charts. The total coverage is shown in Figure 2 below.

The charts are produced at two scales. The first is the main working chart scale 1:250 000 (see Figure 3), of which about 30 have been produced. The second scale is 1:1 000 000. There are only two in this series covering the whole of the UK continental shelf within 12nm limit (North and South).

Will these charts be of assistance to the Minewarfare community? The answer must be "Yes". Despite their unit cost of £15 each, the user friendly format could be of great value in determining important factors such as potential mine burial areas and possible areas of high reverberation outside the normal routes and exercise areas. Admittedly, some of the information contained in these charts can certainly be found in other formats in existing classified MW publications. However, the clarity, and breadth of detailed information provided may prompt demand for a wider access or distribution. Will they be made available to the Minewarfare community? That I can not answer, but I would hope they will be. Any support for such a proposal should be directed through normal Service channels. §

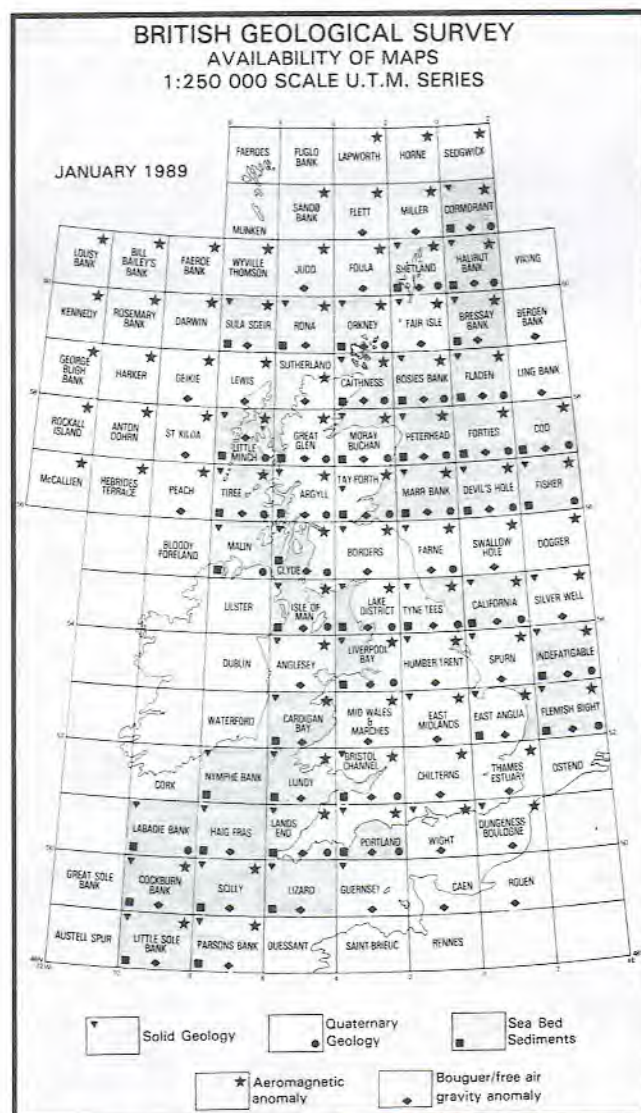


● Fig 2: Survey Coverage

M	.....	Mud
sM	.....	Sandy mud
(g)M	.....	Slightly gravelly mud
(g)sM	.....	Slightly gravelly sandy mud
gM	.....	Gravelly mud
S	.....	Sand
mS	.....	Muddy sand
(g)S	.....	Slightly gravelly sand
(g)mS	.....	Slightly gravelly muddy sand
gmS	.....	Gravelly muddy sand
gS	.....	Gravelly sand
G	.....	Gravel
mG	.....	Muddy gravel
msG	.....	Muddy sandy gravel
sG	.....	Sandy gravel

Terminology and grade classes (after Folk, 1954).
Note: The lower limit of slightly gravelly (g) sediments has been raised from 0.01% to 1.0%.

● Key To Symbols



● Fig 3: BGS Charts Available

Droggy's Corner

WHERE ARE WE??

by Ian Turner

There is nothing worse than getting a ship on task with everything and everyone ready to go only to find the precise navigation system is on the blink... How often has it happened to you?

The fact is that minehunting and sweeping can be a total waste of time if you cannot guarantee the absolute position of the ship and the contacts which have been located. Why is precise nav. so difficult and unreliable? Several reasons were discussed at the 1989 MCD conference and a short summary is given below together with an idea of what is being done to overcome the problems.

Hyperfix - the major problem has always been locking the receiver into the Hyperfix signals and detecting a lane slip. There is encouraging news that Mode 4 operation is working successfully in some areas and this permits the receiver to lock in automatically.

QX3(3) - in the Ton Hunters is a capable system but some bugs need to be ironed out - improved software should be in use by early next year.

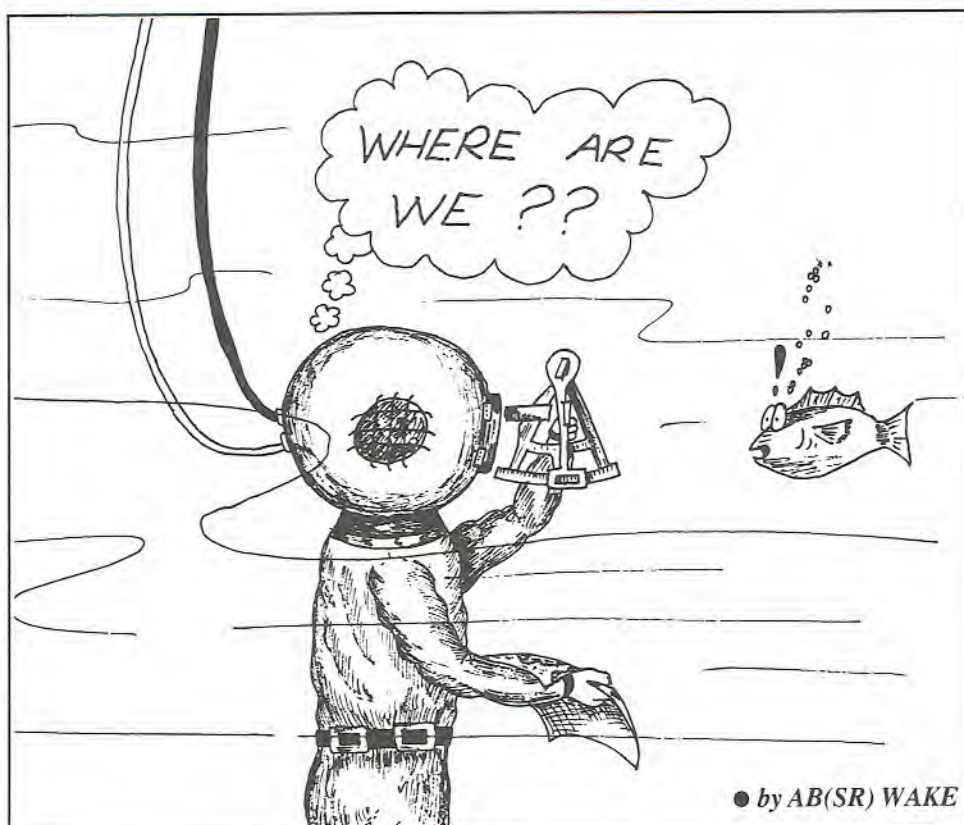
Hunt Class - problems centre on the CAAIS computer which only accepts two Hyperfix patterns. A much more flexible and powerful navigation processor (NAV PAC) should be in service by 1992 and will remove nav. computations from the command system. A similar problem exists in the SRMH where the Nautis computer has limitations as a nav processor.

Training - in precise nav. techniques is now being done at the RN Hydrographic School in DRAKE for MWOs and MCDOs and the initial feedback is very positive (*"why weren't we taught this years ago?"*). There is a requirement to understand which datum and spheroid is in use to avoid plotting fixes in the wrong place...different nav. aids are often referred to different datums...it may be complicated but it can't be ignored!

Over the past 10 years or so the ability to navigate precisely has improved enormously. The Hydrographer has built up a lot of expertise which is currently being tapped by COMMW in many ways: HMS HERALD gave invaluable support during Gulf operations;

Survey ships regularly take part in MCM exercises; there will be two Hydrographic Officers on the Staff of COMMW next year and further officers may be loaned for seariding during exercises.

To conclude, there are many developments on the horizon such as the satellite Global Positioning System which will revolutionize precise navigation - making it more accurate and simpler for the user to operate. In the meantime the current systems need to be operated with care to ensure that the ship is being fixed to the required standard of accuracy. A lot of effort is being spent on improved kit which will do the job more effectively and make life easier for the man in the Ops Room trying to find out where he is. Precise navigation has been identified as a crucial skill for MCMVs. There has been a lot of helpful co-operation between the Droggy and COMMW to improve the situation...long may it continue. §



THE USE OF MINES DURING THE FIRST WORLD WAR

by Paul Davey

As a direct result of Great Britain's active dislike of the mine as a weapon of naval warfare, the outbreak of hostilities with Germany on the 4th of August 1914 found her wholly unprepared for any extensive operations and equally lacking in a clear mining policy. Prior to the war it had been envisaged that mining activity would be confined to the laying of a few lines of mines to defend certain areas, whilst the mining of enemy waters had not been seriously contemplated. It was intended to go beyond the requirement of Article III of the Hague Convention, by issuing general shipping warnings prior to the laying of any minefield.

The total stock of mines amounted to about 4000 of the 325lb "Service" type, fired by a mechanical lever: this mine was

".....this mine was virtually untried and full of defects..."

virtually untried and therefore full of defects, even the firing pistols being still in the process of modification. The only ships available for

laying were seven old cruisers of the Apollo class, which had been fitted to carry 100 mines each, and these constituted the Minelaying Squadron.

As far as the defence against the mine is concerned, simple wire sweeps were available and explosive charges or grapnels could be fitted to these to increase their efficiency, but only a number of trawlers and six old Torpedo Gun Boats, (CIRCA, HEBE, JASON, LEDA, SPEEDY and NIGER), at first served to form the minesweeping forces. Germany held quite opposite views on the value of the mine and before the war started had decided to use it to the fullest extent, almost regardless of the Hague Convention. Consequently she held an ample stock of efficient mines carrying Hertz horn firing gear and had a large number of warships, auxiliaries and even submarines fitted for minelaying.

Russia took a similar view to Germany with regard to the weapon and was well equipped for minewarfare; but other nations, even Japan, had only small stocks of modern mines to meet a limited minelaying capability.

Predictably, the Germans were the first in the field when war came and, by the time that hostilities had actually started, the auxiliary minelayer KONIGIN LUISE was well on her way across the North Sea to lay a minefield about 20 miles N.E. of the Outer Gabbard. She completed her task on the night of 4th/5th August and set off home. However, her movements had been observed by a stray British trawler which, early on 5th, met the cruiser AMPHION and reported seeing a suspicious vessel "throwing things overboard".

The AMPHION, accompanied by the Third Destroyer Flotilla, had left Harwich at dawn to take part in an offensive sweep along the Netherlands coast which resulted in the sinking of the KONIGIN LUISE by gunfire. However this story has a sequel; for the AMPHION, when returning to Harwich on the following morning, struck two mines in the KONIGIN LUISE's field and sank, losing one officer and 150 of her crew together with most of the prisoners taken from the German Minelayer.

"R.N.'s HUMAN MINESWEEPERS"

Admiralty Press Release
dated 6 October 1945

The safe passage of the giant 50,000 ton liner EUROPA out of Bremen was largely due to the efforts of the Royal Navy's "Human Minesweepers": divers specially trained to find and render safe mines which could not be swept by normal methods. Since after D-Day these teams of naval diving and mine disposal experts, known as "P" Parties, often working in appalling conditions and submerged in mud, had cleared every major port from Cherbourg to Bremen. It was at Bremen that the greatest test of their courage and skill was made. Some 60 mines had been laid by the enemy before the surrender. Their location was unknown and the opening of this vital port was entirely dependant on these mine clearance experts.

Diving and mining history was made when a "P" Party Officer, Lt. George Goose, RANVR of Adelaide, first rendered safe underwater a little known enemy "Oyster" mine at Bremen.

"I had seen bits of one before but this was quite different from the one I had seen", Lt. Goose said afterwards.

"The mine was resting on a body - there was plenty of rubbish and bodies in the harbour - but I didn't worry about this. It was very dark and I had to work by sense of touch in about two feet of mud. It was quite cold too - and a little lonely," he admitted.

"I took the primer off and brought the mine up to the surface. It was like taking the spark plug out of a car - you can do it in the dark if you know

what your looking for."

The birth of the "P" Parties came during the Mediterranean campaign: It was found that the enemy could lay mines with a delayed action of up to 80 days - an unexpected threat to port liberation which had to be overcome. It was decided that the divers trained as human minesweepers were the answer to this new menace. The Admiralty Experimental Diving Unit designed a special shallow water diving suit which embodied the first operational application of the revolutionary principle of mixture-breathing in a closed circuit.

Two "P" Parties - all volunteers - each of about 40 ratings and 2 officers were recruited. Personnel were trained in mine and bomb recognition, in avoiding booby-traps, in the use of automatic weapons, in field work and in tying bends and hitches in zero visibility.

The parties went into action soon after D-Day, one at Caen the other at Cherbourg. A grid jackstay search technique was developed to cover the search area.

Three more British parties and one Dutch party were speedily trained and were seen moving along the European coast hard on the heels of the liberation armies. Cherbourg, Caen, Boulogne, Calais, Brest, Dieppe, Le Havre, and Rouen were all cleared and new types of ground-mines, demolition-charges and jettisoned enemy gear were recovered.

Appalling conditions of ice and thick mud (often over the divers' head) were encountered, but the work, vital to the speed of European liberation, never stopped.

The clearance of Antwerp was completed in record time, and by the end of December, Zeebrugge and Flushing were free. Despite the dangers of having to breathe oxygen under pressure and the continued menace of underwater explosions, strict observance of standing orders enabled the gigantic task of "P" Parties to be completed with no lives lost through diving training or operations.

Constructive

HUNT CLASS MCMV JUNIOR RATES ACCOMMODATION

By George Turnbull

During a recent deployment of the Second MCM Squadron an embarked Constructor Officer (Lieutenant S PURVIS) was given the task of investigating a possible solution to the "much discussed" Junior Rate habitability problem of the HUNT Class vessel. His proposals make interesting reading and have been forwarded to DGUW(N) ARE PORTLAND for further discussion and evaluation. The "meat" of Lieutenant PURVIS's report is as follows.

The design of the layout of the forward Junior Rates accommodation on the HUNT class MCMV has long been criticised for its inhabitability. This becomes exacerbated in "heavy weather" when the junior rates frequently camp out in the main passageway. In addition, the design of the bunks has been criticised for not being sufficiently sturdy or rigidly fixed.

The retaining strap instills little confidence in the occupier of the top bunk and would readily be swapped for the old style lee-board.

Space is at a premium, which is not helped by the intrusion of the two hawse pipes, which effectively cut the mess into two narrow halves and wastes what could be clear forward space. The addition of the three enhancement bunks without the addition of adequate kit locker space is also a major cause of complaint. As well as the complaints about the physical presence of the hawse pipes there was much consternation with regards to the noise produced by the anchor cables, not only when working cables but also during normal cruising stations. The Dining area/Recreation space was considered to be poorly laid out with the Junior Rates privacy being constantly invaded by "All comers" who wished to make use of the communal hot water boiler. In some ships this problem has been overcome by re-siting the boiler in the laundry compartment.

The bathroom was criticised as being inadequate and it took excessive time to clear the air of both the smells of human waste and the water vapour. The close proximity of the showers and the WC's (virtually opposite each other) often made for some close encounters of the unwanted kind.

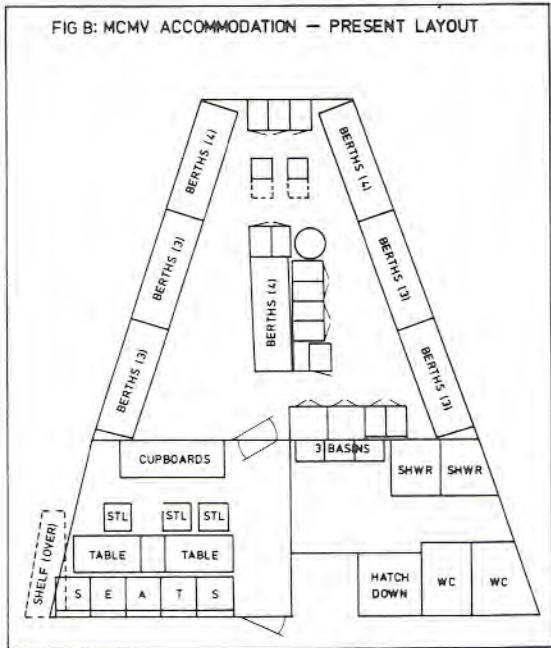
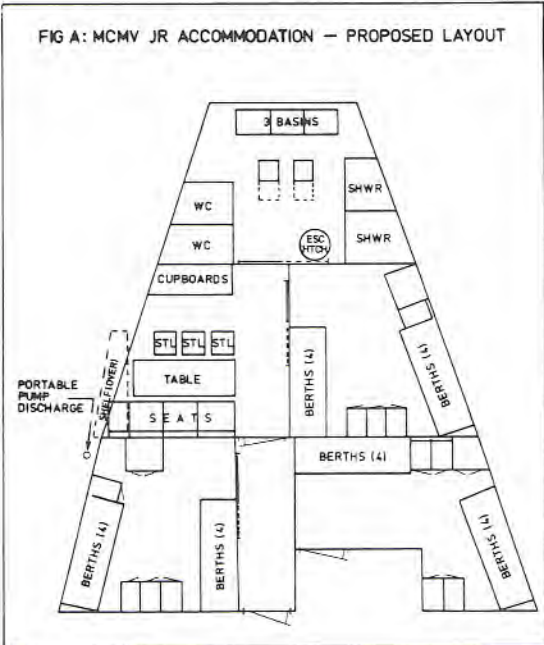
Taking into account the above considerations, plus a host of other factors Lieutenant PURVIS proposed the revised layout shown below in Fig A. The bathroom has been moved right forward, being separated from the new Dining hall, which is situated aft on the port side by a partition bulkhead. An eight berth cabin is sited opposite the Dining Hall. The old Bathroom and Dining area are each converted to eight berth cabins.

Overall, clear deck areas have been increased in all spaces, except the Dining hall, which now has seating for 6/7 instead of 10 as previously. A comparison of the current layout is at Fig B and a comparison of Deck area per man is shown at Table 1.

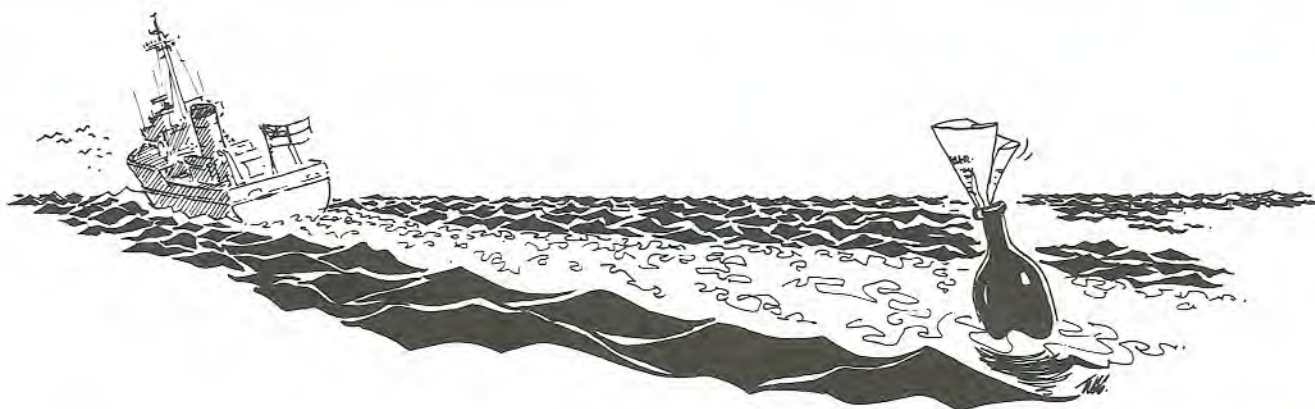
Constructive comments on this proposal would be welcome.

DESIGN		BATHROOM	DINING HALL	MESSES
PRESENT	JR's 21	0.42	0.55	0.63
	24	0.37	0.48	0.55
PROPOSED	JR's 21	0.48	0.41	0.69
	24	0.42	0.36	0.60

Table 1: Deck Area Per Man Comparison (m²)



Letters to the Editor



Dear Editor, RNR MCM OPERATIONS

With regards to your Editorial in Volume 1 Number 1, I would point out that the RNR, and the RNVR before it, has been involved and been continuously tasked in MCM operations since the Reserve was reformed in 1947. We started with MMS and then had "Tons" until we acquired MSFs in 1986. There is therefore a wealth of MCM experience in the RNR. It is not in its "infancy".

Yours sincerely

J.L. GALPIN

Commander RNR
Commanding Officer
Tyne Division RNR
HMSCALLIOPE

● *The reply to this letter can be found within the main Editorial on Page 2.*

"Minewarfare And Diving" welcomes letters from readers. Letters should be addressed to the Editor and should include a daytime telephone number. Please cite page reference and edition for any article mentioned. Letters may be faxed to: 0705-822351-24705.

Letters not intended for publication should be clearly marked as such. Where possible authorities or Units involved in correspondence will be given the automatic right of reply in the same edition

Dear Editor, MAD MAG

Very much appreciated. Look forward to next issue.

Lt Cdr RUSSELL

DI 57

MoD Main Building
Whitehall

Dear Editor, ORIGINS OF THE BLACKFOOT

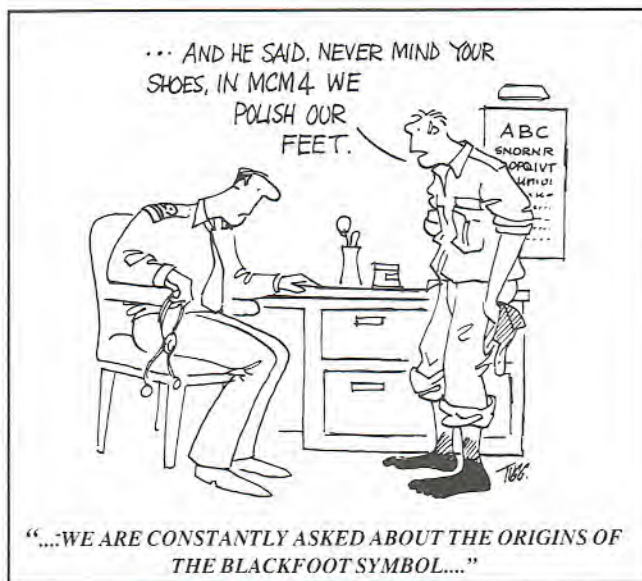
We are constantly asked about the origins of the Fourth Squadron and, in particular, of the Squadron's Blackfoot symbol. To try and satisfy the interested and hopefully to stimulate some further discussion, here is the "Official Version".



The roots of the Fourth MCM Squadron can be traced back to early 1916 when it comprised of 13 trawlers and was attached to the Grand Fleet at Scapa. At the end of the First World War the Squadron was disbanded and not reformed until June 1939, with Halcyon and Hunt Class Mine Sweepers. During Operation DYNAMO (the evacuation from Dunkirk) the Squadron ships transported nearly 6000 troops back to the UK. From April 1941, equipped with Fast Mine Sweepers, the Fourth MCM operated around the UK. In preparation for the invasion of Europe the Squadron cleared two channels between the Isle of White and the assault beaches. In October 1945, after only a few months in Reserve Fleet, the Squadron was reformed and, consisting of Algerine Class Mine Sweepers, they operated in the English Channel, and then cleared the German minefields off Stavanger. Since 1946 the Squadron has carried out Fishery Protection duties around the UK, Minewarfare in the Mediterranean and Anti-Terrorist Patrols in the Far East during the Indonesian Confrontation.

The distinctive funnel badge originated in the 1960's and is supposedly based on sooty footmarks which marred the scrubbed and sunbleached wooden decks.

Perhaps there is a reader who knows the actual circumstances behind



the adoption of the "sooty-foot" logo?

Yours faithfully,
"DIXIE" DEAN
SCPO (MW)
MCM4
BFPO Ships

More Letters



Dear Editor,

Many thanks for incorporating the BE-NL Minewarfare School EGUERMIN in the distribution of your new Magazine which is very much appreciated. We hope you will be able to keep on publishing the magazine in the present format which looks very smart and promising.

With kind regards,

D.B. SLUIJTER

Captain RNIN

Director, EGUERMIN

Dear Editor,

DIVING IN THE ARMY

It was with great interest that the permanent staff of the Royal Engineer Diving Establishment based at HMS NELSON (Gunwharf) read the new format "Minewarfare And Diving" Magazine. For some considerable period of time the Army's divers have been suggesting a magazine along the same lines, but our efforts have been limited to rather low level badly produced news sheets.

The editorial staff of this new format magazine have recommended that we, the Army, participate and contribute to future editions thus cementing the close relationship that already exists between our respective Diving Training schools at Gunwharf. I heartily endorse this view. Technical input can of course come from the school but articles of interest must come from the Teams out in the field.

I appeal directly to all the Army's diving teams - here is the opportunity you have all been waiting for, please support this excellent magazine and forward any articles together with suitable photographs through the RE Diving Establishment for future publication.

Yours faithfully,

R. F. MUNDY

Lt Col RE

Superintendent of Diving (Army)

Dear Editor,

IRONMAN SYNDROME

I would wish to point out that, although the "Ironman Syndrome" (printed in Vol 1 No 1 of this magazine) is a salutary lesson to all divers, the incident in question did not in fact take place at Defence & Civil Institute of Environmental Medicine (DCIEM), Toronto, Canada.

The article was written by a USN Officer at an undisclosed USN facility. Staff at the Canadian Forces Experimental Diving Unit, DCIEM are still working to discover which particular tunes were used for the experiment with a view to including these on the playlist for forth-coming dives! FDU 3 team members beware...Congratulations on an excellent first issue. It is the envy of the CF Clearance Diving Branch.

Yours aye,

JON CHAPPLE

Lt RN

DCIEM, Canada

Dear Editor,

DIVING BRANCH MOTTO

Firstly, I would like to send my congratulations to all the people who have contributed to the production of the "Minewarfare And Diving" magazine. In the opinion of the guys here and myself it is a truly professional and informative job.

Food for thought: have we ever had a Diving Branch motto? The Americans have "WEDIVE THE WORLD OVER" and "EXCELLENCE UNDER PRESSURE", the Aussies have "UNITED AND UNDAUNTED". I know Chris Ballinger continued the "READY, AYE, READY" with CLANSMAN, so how about it? Lets try and keep any suggestions mainly 'clean' and also avoid the advanced-course Latin stuff.

Yours,

G.R. "BUCK" TAYLOR

CPO(D) USN Exchange

Consolidated Divers Unit

San Diego, California

Dear Editor,

You invited comments on the new magazine, so here goes; firstly, it is a great improvement on the old, "photocopied" editions, and the FSU's are now dist'ed (this was the first mine mag to reach FSU02 in the year that I've been here - previously, we have relied on the boats showing them to us. Secondly, there are lots of nice, coloured pictures, which should enable Tech Rates to look at the mag - which means a wider circulation. Last, but certainly not least, the "Where Are They Now?" feature: this is an excellent idea. Nick (now PC) Carter and I said this back in '85. However, the one shown in the first issue is hopelessly out-of-date - having enjoyed my buttons for the last year, may I have them back please?

If we are going to have this article as a regular feature (and we should) can we research it a little better? Perhaps MW/DSR's should send the Ed. a six-monthly MW/D nominal list for ships and units ...?

For those interested in amending their printout, FSU02 at time of writing are:-

CPO(MW) P M (Pawl) STOCKLEY

LS(MW) J J M (Paddy) O'ROURKE

AB(MW) D J (Dave) McCARTHY

AB(MW) B K (Benny) CARROLL

AB(MW) M S (Timmy) MALLETT

AB(MW) C A (Stan) STANDAGE-SIMPSON

Yours Aye

PAWL STOCKLEY

CPO(MW)

COXSWAIN FSU02

- *The shortcomings of the "Where Are They Now?" lists are acknowledged. We relied on printouts provided by DNOA(X) and CND HMS CENTURION. Apologies to those affronted are rendered in the Editorial - see Page 2. Our "Let-out" clause was printed on Page S.8 of Vol1 No1, but thank you for writing to voice your opinion. Next, perhaps, an article from an FSU on "Happiness Is A Clear Jetty"?*

Minewarfare Training



LEADING SEAMAN TRAINING

by Alan Bainbridge

Are our LS(MW) trained well enough, or is the LS(MW) Career Course Training just a swept-up, but boring SEA to AB(MW) course? I ask this very seriously, because I think we need to change the training for our future LS(MW).

Prior to May '87, I spent 15 months in the ARCTURUS trainer in MDDS, assisting CPO(MW) Joe George with the HUNT Class training schedule. This covered all courses being taught, i.e. Babies, Killicks, Senior Rates, LMCDO's and Hunt PJT's (which I taught). The only course I ever found that seemed to repeat any previous Career Course, was the Killick's. I now feel that the Killicks are not receiving the proper encouragement to become Senior Rates. We need to nurture our Leading Hands to progress their Task Books. Responsibilities are not being delegated, to take some of the workload from the Bosun's/ORS shoulders. New jobs and paperwork have slowly increased over the years for all SR's on the HUNTS. The aim of my proposal is to cut down on-the-job training and increase job responsibility, thus giving the Killicks the experience, and sense of pride in their work which would encourage them to further their careers.

I think the LS(MW) should be CAAIS-trained so that he could set up a Minehunting search, give war cries and take charge as MHD. The LS could also be better employed during Route Surveys, Minehunting and in general Ops Room duties. This would broaden his Ops Room experience. After all, with only one weeks training, the LS(MW) in Tons carries out the duties of MHD.

The LS(MW) should have some insight to Stores allowances, demands and raising to C126's. The LS(MW) could take full responsibility for NILE: I have read recently (in either a DCI or FTM) that this has been allowed on some Minor War Vessels, because there is no Seaman Branch SR embarked to carry out the duty. The LS(MW) should also assist the NBCDQ as his Runner, in his routine daily tasks.

These proposals would obviously have to be studied, prior to implementation. I feel that it is the only way of easing our manning shortage while producing a more experienced PO(MW). Give the LS(MW) a sense of responsibility, interest and motivation and, hopefully, the lads will move forward to form a more secure Branch structure.
Happy hunting!

RAN PO(MW) LOAN POSTING -

MID TERM REPORT

by Brad Doyle

The Job

Twelve months sea service with the RN in HMS BROCKLESBY as Bosun.

The Feedback

Arriving in the UK two months early gave me time to adjust to a different culture and to complete a HUNT Class PJT at MDDS. An active attempt is being made to make the position of PO(MW) more attractive with a view to alleviating current senior sailor manning problems in the Minewarfare Branch. This has the added advantage of making my job that much easier. However, there is a "too many chiefs and not enough indians" situation, especially when all four of the leaders want to take charge. (The 4xLS(MW) is not a popular policy amongst the troops - for many reasons). Personally, the position of Bosun gives me great job satisfaction, in that I am employed doing what I have been trained to do and being allowed to get on and do it.

The Benefit

As to the value of the loan exchange, I believe that the RAN gains invaluable experience - via these postings - due to the high profile of Minewarfare in the RN and the exacting standards set in the Minor War Vessels Flotilla. The practical lessons learned can and will be applied throughout the rest of my naval career. However, I believe that accompanied married men may find the strain of separation - due to high operational commitments - detrimental to their marriages and suggest that future RAN loan postings receive counselling. Single men have a great time!

The Food

My only criticism of the Royal Navy is the preponderance of 'greasy' goods, common to the general British taste, that strike a discordant note with my Australian taste buds ... and the beer's warm!

Requiem To A Weapons Armourer

In days of old when Sailors were bold
And Muppets were not invented
UW's did the job without a sob
And, by God, we were contented.

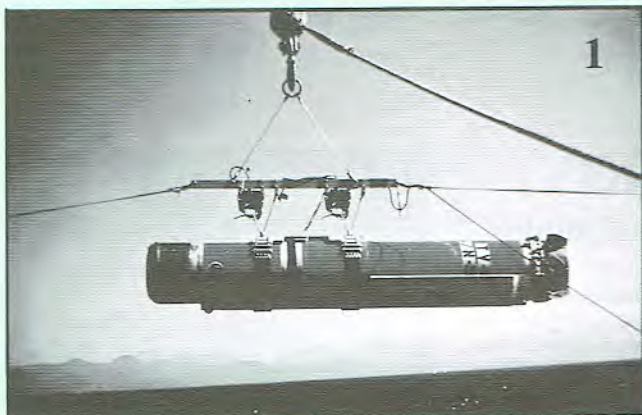
The times of yore in good ole' Singapore
You moved along to old Hong Kong.
The times were never better
'Til in '74 they were no more,
When you received that deadly letter.

But those days are past and we fear at last,
The final days are in contention.
Thus, we must leave without reprieve
And draw our hard-earned pension.

George C and Taff J
1965-1990

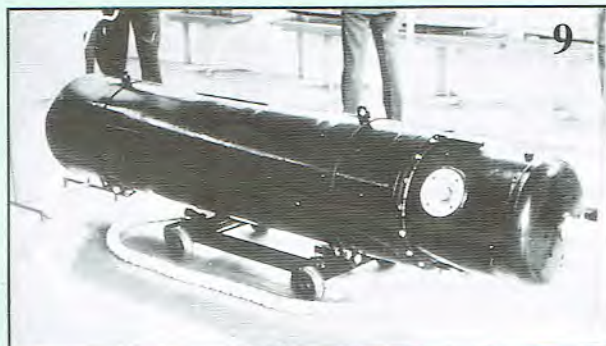
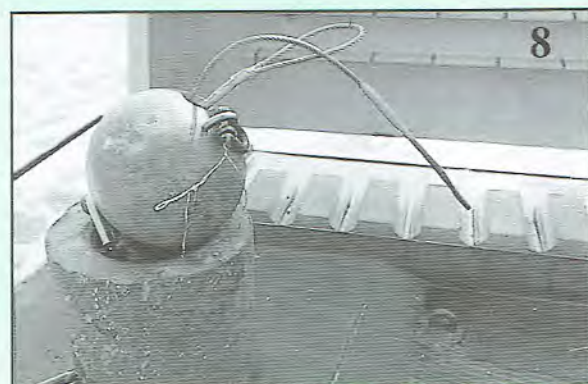
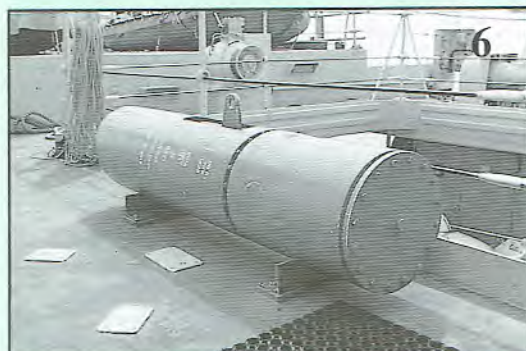
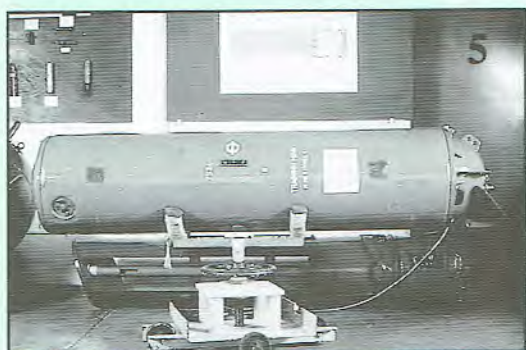


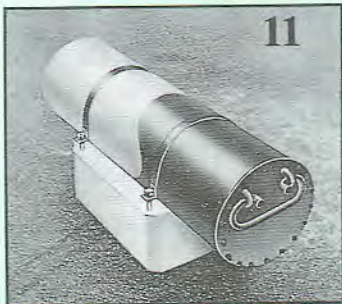
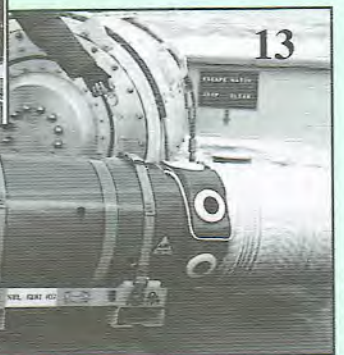
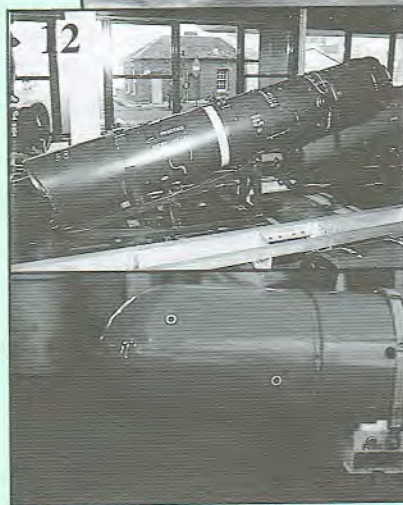
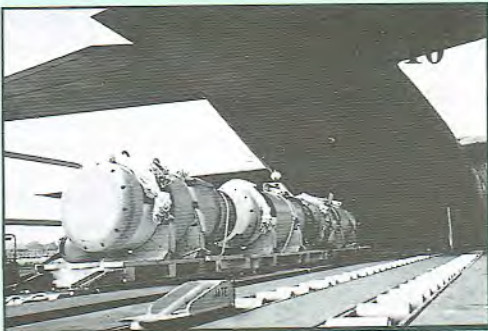
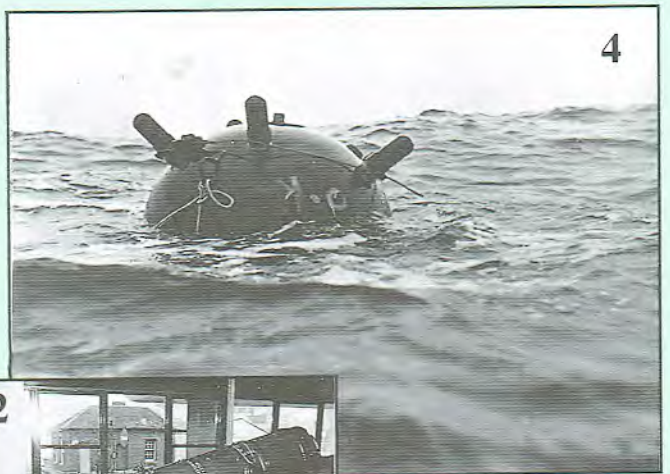
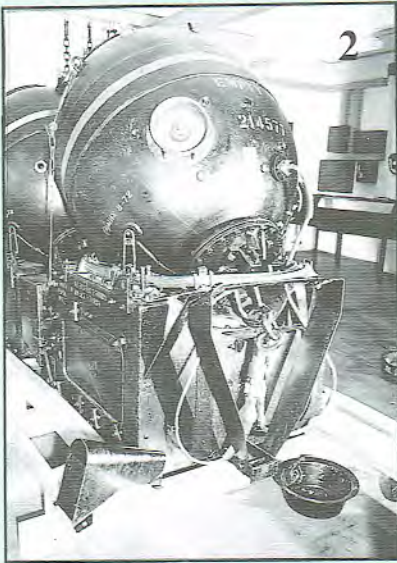
Recognition



“WHAT’S MY MINE?”

Here’s a mix of mines of varying vintage for you to practice your recognition talents. See if you can identify the types of mine shown by reporting type and nationality. The solutions are on page 37.





RECOGNITION RIPPER

AIRCRAFT RECOGNITION

14



EXOCET MISSILE AT 1.5 KM.

MIRAGE III SEEN AT 15 KM.

SEA-WOLF MISSILE AT 1.5 MILES.....

....NOTE SIMILARITY TO DEAD FLY ON WINDOW

● By Dave Carey. Non-MODUK photographs by courtesy of USN and MUSL.

Divers Dits



GOLFING NEWS

by Les Sharpe

Hi Bandidoes!

It's Pancho Villas here, back from a long siesta (make and mend to the ignorant) after the closing of "Buddyline".

Here is the latest news from the Diving Golfers scene. Maybe that should read "Golfing Divers", but I suppose it depends on one's priorities.

The 1989 Championship gave us new names in the frame in both the singles and pairs. The AM round was won by Dave Sandiford with a score of 42 points (yes, that's right - 42). Well done Dave but what happened in the afternoon? Too many wee drams? Second AM was Frank Spragg with a 41. "Frank who?" I hear you say. He's an old & bold ex-CDO. Good on yer Frank!

The PM round was won with 39 points by Tug Wilson with Jesse Owen second with 36 points. Notice how the scores dropped after lunch.

The pairs competition was won by Dave Sandiford and Raffel (sorry buddy I don't know your christian name) with a combined score of 135 points, with the second pair being Stuart Sissons and someone called Ansell, (anyone know him?) with 131 points. The winner of the ladies competition was again Mrs Sizer: well played Anna. The lesson was won by Ray Jarret (next years winner?), with the nearest to the pin and longest drive prizes scattered around the branch, a notable one was by our Honorary Diver, Brian Humphries the sailmaker.

Oh! I nearly forgot to mention the winner and 1989 Divers Champion. Silly me, he'd never forgive me and as he's my DO and the granter of M&Ms so I'd better give him a build up.

The overall Divers Open Champion of 1989 with a score of 78 points was....Tat Tat Tat Taaaaaa!! Mo Crang with some very steady golf. He has since bent my earhole on several occasions with the gory details but hopefully his handicap has been slashed sufficiently to prevent another win, but he tells me he is going to be the first champion to successfully defend his title, so watch him.

Well done all winners, cheers to everyone who turned up to make it another successful day.

"The Committee's" organisation was magnificent so a special thanks to Stu Sissons, John Dadd and the other feller for a job well done.

The date of the 1990 Championship is Monday 6 August and it looks as if the same committee are running it. The format is as for last year with details on the entry form.

For an entry form send a stamped addressed envelope to: CPO SHARPE, Diving Section, HMS NELSON (GUNWHARF).

Association of First Class Divers.

by Jim Green

On Saturday 14 Oct 89 the Association of First Class Divers held its first AGM which was followed by a Disco and Buffet supper. Many attendees were accompanied by wives, girlfriends or aunts. Qualification for membership of this exclusive Association is that of having successfully completed a diving course for First Class Divers. This includes serving and non-serving personnel, SD and GL-transfer SD officers. Honorary membership is open to all founder members of the Clearance Diving branch, pre-1960, who are worthy by their early professional attainments and whose honorary conferral will promote and enhance the special interests of the association. The President of the AOFCD is Captain J.C.L. Wright. OBE RN. Charman WO(D) Jim Green. Secretary WO(D) Scouse Kidman and treasurer WO(D) Piggy Trotter.

Out of approx. 300 people eligible to join, we have a current membership of 140, of which 40 attended the AGM.

Judging by the noise and exchange of dits many people were taking a trip down memory lane. Some members had not seen each other for nearly 30 years & consequently a lot of ground was covered in a short time. On departure it was apparent that everyone had a most enjoyable evening and are looking forward to our next get-together. This long-awaited Association seemed much appreciated by its members.

We are always anxious to hear from anybody wishing to join, so, please spread the word!

For information contact Portsmouth NB 0705-822351 Ext. 24866/24583 or BT 0705-753751.

A social committee has been formed and further events will include horse racing in HMS Nelson (being organised by turfs of the course Messers Sharpe and Sissons). for 5 May 90. Our AGM on 13 Oct 90 will be followed by a social function. This year you are requested to leave parking billets adjacent to the entrance vacant for wheelchairs.

Bacardi On The Rock

by Tony Devitt

Here it is, the first dit from the newly-formed Gibraltar Diving Team. Our plush suite of offices on Coaling Island (well, a three-room mud hut to be precise) isn't much, but it's home-sweet-home to us.

It has been a wet and rainy few weeks recently but at least its WARM rain. Diving viz is down to 10m and Bacardi's £6 a litre! Diving (we do occasionally) is pretty good, although jobs depend on ship movements, but we have plenty of wrecks to survey and we dive most days of the week. Larger jobs have come our way, PENELOPE for one. Help has been available from UK when needed and we try to prevent loaned divers from ending up in Spanish Jails!

Driving here is something else! The locals don't drive, they just aim the car. They don't park, they just temporarily abandon their vehicles - a bit like driving a Red-wing really! The summer weather is good and if water sports are your thing it's the place to be. The Costa is literally just up the road with wall-to-wall (or beach-to-beach) scantily-dressed females of all ages and nationalities: its the single man's dream come true! Rooke accommodation is not the best but that should be soon remedied. Married quarters are not brilliant but certainly habitable Gibraltar can become a little cramped (I was going to put claustrophobic but I can't spell it!), but with the border open, Spain and Portugal are only a few hours away, and the REAL Spain is even nicer than the beaches.

For anyone about to foray into NATO waters who hasn't got a full grasp of **NATORANTO**, herewith a few more choice phrases that may get you out of (or into) a sticky situation....



Key: English
 French
 German
 Dutch
 Italian
 Spanish

It's not so bad

Ce n'est pas si mal
 Es ist nicht so schiimm
 Het isniet zo erg
 Non é grave
 No está tan mal

It's his fault

C'est sa faute
 Es ist seine Schuld
 Het is zijn schuld
 E'colpa sua
 Él tiene la culpa

I'm innocent

Je suis innocent
 Ich bin unschuldig
 Ik ben onschuldig
 Sono innocente
 Soy inocente

Here's my witness

Voici mon témoin
 Hier ist mein Zeuge
 Hier is mijn getuige
 Ho qui un testimonio
 Aquí está mi testigo

He started it

C'est lui qui a commencé
 Er hat angefangen
 Hij begon
 ha cominciato lui
 Él empezó

That's the truth

C'est la vérité
 Das ist die Wahrheit
 Dat is de waarheid
 Questa é la veritá
 Es la verdad

Calm down

Calmez-vous
 Beruhigen Sie sich
 Blijf maar kalm
 Calma
 Cálmesese

My right of way

Ma priorité
 Mein Wegerecht
 Ik heb voorang
 La mia precedenza
 Mi derecho de paso

Send me the bill

Envoyez-moi la facture
 Schicken Sie mir die Rechnung
 Stuur mij de rekening
 Mandatemi il conto
 Le mándeme la factura

Set me free!

Libérez-moi!
 Lassen Sie mich frei!
 Laat me vrij!
 Lasciatemi libero!
 Déjenme libre!.

I'm very sorry

Je suis vraiment désolé
 Es tut mir sehr leid
 Het spijt mij erg
 Mi dispiace molto
 Lo siento mucho

That's a lie

C'est un mensonge
 Das ist eine Lüge
 Dat is een leugen
 Questo é falso
 Es mentira

My boat is/is not insured

Mon bateau est/n'est pas assuré
 Mein Schiff ist/ist nicht versichert
 Mijn boot is/is niet verzekerd
 La mia barca é/non é assicurata
 Mi barco está/no está asegurado

May I have a cell with a harbour view?

Puis-je avoir une cellule avec vue sur le port?
 Kann ich eine Zelle mit Blick zum Hafen haben?
 Mag ik een cel met uitzicht op de haven?
 Posso avere una cella con vista sul porto?
 ¿Puedo tener una celda con vistas al mar?

I'll send you the bill

Je vous enverrai la facture
 Ich werde Ihnen die Rechnung schicken
 Ik zal u de rekening sturen
 Vi manderó il conto
 Mandaré la factura

Give me back my bowsprit!

Rendez-moi mon beaupré!
 Geben Sie mir meinen Bugspriet Zurück!
 Geef mij mijn boegspriet terug!
 Ridatemi il mio bompresso!
 ¡Devuélvame mi botalón!

Please don't tell my husband/wife/friends

Ne le dites pas á mon mari/ma femme/mes amis
 Bitte erzählen Sie nichts davon meinem Mann/Frau/Freunden
 Vertel het alstublieft niet aan mijn man/vrouw/vrienden
 Per favore non lo dite a mio marito/moglie/amici
 Por favor, no diga nada a mi marido/mujer/amigos

I want to speak with a lawyer/my consul

Je veux parler á un avocat/á mon consul
 Ich möchte mit einem Anwalt/meinem Konsul sprechen
 Ik wil een advocat/mijn consul spreken
 Voglio parlare con un avvocato/il mio Console
 Quiero hablar con un abogado/mi cónsul

More Letters

Dear Editor, TON CLASS ANNUAL GENERAL MEETING

The Third AGM of the TON Class Association will be held at the Portsmouth Crest Hotel at 1400 on Saturday 22 September 1990. The AGM will be followed by a reception and Reunion Dinner. Further information is available from me, on request.

Yours Aye,
JACK WORTH
'Amethyst'
Lerryn
Lostwithiel
Cornwall PL22 0QF

Dear Editor, HIJACK IN GLASGOW

Congratulations on producing a very professional, well laid out and informative MAD MAG. In fact, hardly had I read my copy than it was 'hijacked' by the PO Wren Writer!!!

Yours Aye
MICK JAGGER
CPO (PD)
HMS GRAHAM
Glasgow

Dear Editor, THE DIVING BRANCH - SOME THOUGHTS

Manpower cuts, commercialisation, procurement delays and equipment failures are assuming ever-increasing prominence in the affairs of the Diving Branch. It seems that we lurch from crisis to crisis, stuck as we are with outdated equipment of questionable reliability with, it appears, no hope of improvement. This, despite constant submissions from CINCFLEET, COMMW and other staffs.

It is easy to criticise and denigrate the MOD and other agencies such as DGUW(N). I can assure you that our MOD Desk Officers and those that support us in DGUW(N) are trying hard to get us the equipment we need and keep our current equipment going. Unfortunately, their room for manoeuvre is limited, as is Treasury finance. They also have to compete with other branches of the RN for a share of the budget. In addition, the interminable bureaucratic wrangling is an integral part of this financial process which is why any improvements take so long to appear.

The recent and latest DSSCCD problem is a case in point and the spin-off effects on our operational capability led me to ponder the future of the Diving Branch. Questions came to my mind such as:

- a. Do we really need all teams to have a DSSCCD capability?
- b. What is the future for divers in Minehunters?
- c. Should Area Teams concentrate primarily on Underwater Engineering Support for the Fleet and be equipped as such?
- d. Do we need an IEDD role?
- e. If, as some advocate, Divers are removed from Minehunters, could the branch survive?
- f. Should we remain in the Ops Branch?
- g. Where does CHALLENGER and Saturation Diving fit into this?
- h. Do we need so much emphasis on MCT in view of the supporting role we play?

I am absolutely convinced the RN needs a dedicated Diving capability but it is the form it takes which needs to be addressed. BR 5063 Article 0201 lays out the tasks of the MCD and Diving Branch. It is the implementation of these tasks in the future which concerns me.

Yours Aye,
JON RICHES
Cdr RN
HMS NELSON (GUNWHARF)

Dear Editor, GOOD NEWS AND BAD NEWS

Thank you for my copy of your magazine. For someone who left the RN vowing never to have anything to do with it again, apart from bending the right elbow with my old chums, I find that I have spent the last eight years involved to the hair roots (the long and straight kind not the short and curly ones) with MCD and the HUNTS in particular.

As such I find the new magazine of great interest to me not only for the personnel update but for the technical and material matters which it contains.

In the words of the proverbial, profligate pro, 'Keep it up I like it a lot'. I do have two gripes though; well you didn't really think you had gotten away with it scot-free did you?

- 1. The supplement is out of date, Where are Tim Paul and Tony Rose? They haven't changed jobs recently have they?
- 2. The second is more personal and I doubt if I am the only one to bring it up as you have probably heard from a few old un's by now. I stopped being a 'Mr' when I joined the Andrew as a boy seaman in 1947. I am still a Lieutenant Commander RN but on the 'Retired List'. I also have an 'active' dormant appointment in the "pit" at Northwood so please let's get the title and form address correct.

'Gripes' apart, and they are not serious ones, you and your team have obviously put in a lot of hard work and have set yourselves quite a standard to maintain. I look forward to the next edition with pleasure.

Yours Aye,
'TAG' CAISLEY MBE
Lt Cdr RN (Retired)
Bedhampton
Hants.

P.S. I forward the enclosed little rejoinder, to do with as you wish:

No 'Mr' he,
But MCD,
An LTC no doubt.
Tho' now retired,
His ire gets fired,
When some remove his clout.
So watch it chums,
When your turn comes,
You'll rave and rant about,
And feel as we,
Ex MCD,
If someone misses out,
What you are due,
And 'titled to,
And have a little pout.
So come next 'do'
You'll pay your screw,
Co's mate it is your 'shout'.

● *To err is human, to omit one's Sponsor from a summary list of "Where Are They Now?" may be tantamount to journalistic suicide. A more detailed reply is included in the Editorial on page 2.*

Stop Press: THE 1990 DIVERS' DINNER - HMS NELSON Wardroom - Friday 26 October - All MCDQs/Diving Officers past or present invited. Organiser: Lt. S MARSHALL RN, OIC FDU1, FDG, HMS NELSON (GUNWHARF) for further details

WHERE HAVE ALL THE "SEA-DADS" GONE???

by George Kegg

Did you have one?

I did.

He was the "Old and Bold" one on board who always made sure that you stayed on the right side of the Jossman (or should I say Cox'n these days?). My Sea-Dad was a 3-badge Able Seaman (you had to be at least a one-badgeman to even serve on Sweepers in those days), and it was his job to make sure that you were given the correct (dare I say?) "tuition", steered you out of trouble (well it sometimes worked anyway) and answered all your questions.

I remember well the first time (but not the last, I hear you say), that I got into trouble. I was in a right old state worrying about going to the Table, but my Sea-Dad put my mind at ease and made my ordeal more bearable. After all, he was the one on board who had seen it all before, done



experienced men to fall foul and let all this get out of hand. In the good old days..... when we had Sea-Dads, apart from the fact that it was more difficult to obtain instant credit, a young man's activities could be monitored better, thus avoiding the risk of him getting into trouble.

Now that we don't have our Sea-Daddies any longer to keep a weather eye open for us, how are we going to protect our interests?

I would suggest that maybe we could draft Warrant Officers to sea to act as Divisional Officers, but I don't think this will go down too well, do you? But why not introduce, as part of the PO(MW) Course, a Divisional Senior Rates Course as an ADQUAL before he joins his ship? At least this would give the younger man someone to confide in if he had to seek advice, instead of keeping all his troubles to himself.

I have done this myself, and can assure you that it is of great value. After all, what's one week of your time when through this you could be of value to someone else?

I'm not trying to turn every Senior Rate into an instant Sea-Dad overnight, but at least by attending a Divisional Senior Rates Course he would have a better understanding of how to advise and guide those around him. Perhaps then we wouldn't hear the all too-frequent warcy:

"....Don't bother me son, I've got enough problems of my own to sort out..."

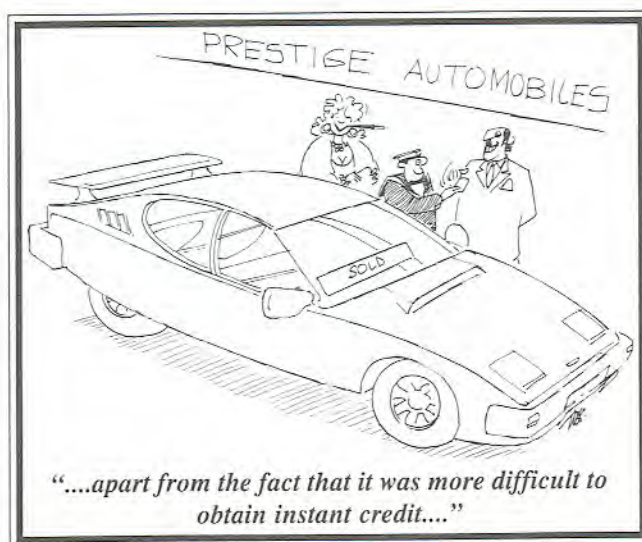


"...where have all the Sea-Dads gone?..."

it all before and had even helped write the Book so his words of wisdom helped me through (I paid the fine by the way). These days you'd be lucky if you found 3 badges on the whole messdeck let alone a 3-badge Able Seaman, so what happens to a man onboard who finds himself in trouble? To whom does he turn for advice? To whom can he talk about the problems he has? If you were a 30 year-old with problems, would you be able to tell them to your Divisional Officer who may be only 26 years of age? I couldn't.

Having served on MCMV's for quite some time I have come across this situation myself and I know how difficult these things can be but at least I was fortunate enough to be able to seek advice when the occasion arose.

The point I'm trying to make is that in these days of this so-called "modern navy" people are expected to move in the fast lane. This means a hectic social life-style, mortgage, wife and kids, car and, of course, the easiest of them all...Instant credit cards. Because all these things are expected of us in this day and age, it is all too easy for less



"....apart from the fact that it was more difficult to obtain instant credit...."

Reader's Response Page



Your Name

Your Rank/Rate

Your Job Title

Your Unit

Your Address

.....

.....

Your Tel. No

Your FAX No

The Editor
 "Minewarfare And Diving" Magazine
 MDDS Faculty of SMOPS
 HMS NELSON (GUNWHARF)
 Portsmouth
 Hants
 PO1 3HH
 FAX: 0705 822351 Ext 24705

Dear Editor,

1. I have read this edition from cover to cover and I think:
- (a) It's terrific - keep up the good work
 - (b) It's OK - but you need more
 - (c) It's no good - because

2. Please find attached my contribution towards the continued success of "Minewarfare And Diving" Magazine:

- It is
- (a) a written article, typed, double spaced and word-counted.
 - (b) a photograph or a slide of
 - (c) a diagram or otherwise of
 - (d) a letter to the Editor (see(a) for the preferred format)
 - (e) less than RESTRICTED in classification

3. I realise that the Magazine publication dates are 1 Jan/1 May/1 Sep of each year, and that by sending my article in today it will arrive at least six weeks before the next edition is due out.

4. I would/would not (delete as applicable) like my material/contribution returned on completion of printing.

5. I understand that inclusion of my contribution, in whole or in part, is at the discretion of the Editorial Committee, but that if I am to be considered for either of the prizes associated with each edition, I must be prepared to have a "grip and grin" mugshot taken and published.

Yours.....

Signed.....

Challenge And Reply

BIG BADGE CHALLENGE I -THE RUNNERS-UP

Dear Editor,
BIG BADGE CHALLENGE

I write in response to the blazer badge depicted on the back cover of "Minewarfare And Diving" Volume 1, Number 1. It is a representation of the silver badge of the Royal Naval Patrol Service, in which I am proud to have served during the Second World War.



I was trained at HMS COLLINGWOOD

in 1942, from which I emerged as an OD Signaller, drafted (at my own request) to HMS EUROPA, Lowestoft. When I first saw my ship (Drifter HMS SOLSTICE) I just did not believe that the Navy could possibly own such a craft, but the SA Sweep over the bow and the LL sweep draped around the deck, coupled with the fact that she was flying the White Ensign, dispelled such doubts. Craft such as this did sterling work. My next and last ship was HMMMS 1002, I joined her at Gosport, (she was still in the hands of the builders Camper & Nicholson).

After she was commissioned we proceeded to Western Approach Command, Liverpool. With the rest of the Flotilla, we turned south to join the "Yanks" at Normandy Landings where, with a flotilla of BYMS, we cleared and opened up the port of Cherbourg: this being our first and sorely needed port.

After this, we handed our "patch" over to a Flotilla of "Free French" Trawlers, and returned to operating from Great Yarmouth. After the defeat of Germany, we left our "E-Boat Alley" and proceeded to Cuxhaven at the mouth of the Elbe to sweep—would you believe it—our own mines.

The silver cuff-badge was awarded after a minimum of 6 months aboard an RNPS Minesweeper or Asdic Trawler (hence the inclusion of the "M/S" and "A/S" letters at the bottom of the badge you featured).

Yours sincerely,

CYRIL COOPER
12 Caughley Close
Broseley
Shropshire

Dear Editor,
SPECIAL FORCES FISH

I am surprised that you should ask for ideas reference the origin of the blazer badge displayed on the rear cover of Vol. 1 No. 1. All who served in the MW Section in the early to mid-eighties will know it is the original emblem for the GMRT, that is: the Goldfish Mine Recovery Team.

It originated after a certain PO(MW) Career course watched the Video demonstrating the US Navy using dolphins to recover mines from the seabed. They decided that this was a good idea but realised, in the light of restrictive Defence Budgets, they would never get approval to purchase the required number of dolphins and therefore came up with a cheaper alternative: GOLDFISH!

The fish were locally purchased and placed into the mine demonstration tank on the mining deck. PO(MW) NEWMAN was appointed I/C of the Team and was responsible for the education and well-being of the fish. The first step was to carry out Recognition Training. This was achieved by introducing "scaled" models of mines into their tank onto various types of seabed, concentrating on the high reverberant aspect. Occasionally, a powered model ship was driven over the "targets" and just to make sure the fish were aware of the possible consequences, model wrecks were introduced into the tank.

All this training was carried out under a suitable disguise: that of a Mine Circuitry Demonstration. Little did they know that they were, in fact, partaking in what could have been a major feat in the animal kingdom! I say could, because Alfie decided it was time to be adventurous and let the fish partake in Navy Days. Unfortunately, during the transit between Creasy Building in VERNON and the Navy Days shed in the Dockyard, a few of the fish died or went AWOL. Alfie lost heart (it was even muted that he began to take on the looks of his favourite fish), the trial ended and the remaining fish were placed into ornamental retirement.

To give the Team recognition, it was decided to award them a blazer badge but, because the trial carried out was so secret, and to save face due to its failure, the powers that be decided on a new title: "MINE SWEEPING ALTERNATIVE SYSTEMS". Hence the "M/S A/S" beneath the badge, and thus the tribute behind the badge.

Yours Aye,

A.N.Y. MOUSE
\$ MCM
BFPO SHIPS

Recognition Quiz Solutions - Page 30

- | | | | |
|----|------------|---------------------|--------------------------|
| 1 | US | CAPTOR | <input type="checkbox"/> |
| 2 | UK | MK 28 | <input type="checkbox"/> |
| 3 | ARGENTINA | TYPE 1925 | <input type="checkbox"/> |
| 4 | IRAN | SADAF 120 | <input type="checkbox"/> |
| 5 | UK | M MK 5 | <input type="checkbox"/> |
| 6 | UK | MK 14 | <input type="checkbox"/> |
| 7 | UK | M MK 1 | <input type="checkbox"/> |
| 8 | UK | SHORT SCOPE WEIGHTS | <input type="checkbox"/> |
| 9 | YUGOSLAVIA | M 70 | <input type="checkbox"/> |
| 10 | UK | MARCONISTONEFISH | <input type="checkbox"/> |
| 11 | DENMARK | TYPE 6 MK 17 | <input type="checkbox"/> |
| 12 | UK | A MK 12 | <input type="checkbox"/> |
| 13 | UK | VEM | <input type="checkbox"/> |
| 14 | UK | RIPPER | <input type="checkbox"/> |

EMBROIDERED NAME BADGES

For those persons interested in ordering Diving, Minewarfare, overalls or No. 8 embroidered badges, the service has been assumed by Roger Sawell of Rainbow's End, Shamrock Quay, Southampton.

Details and prices are available on request, care of the above address.



BIG BADGE CHALLENGE II

The above badge was forwarded by a student on a recent PO(MW) Course. Little is known about its origins but it was obviously awarded to personnel involved in Mine Clearance. Contributions relating to the origin and background of this badge and the requirements for its award would be greatly appreciated.

The best replies will be published in the next Edition (1 Sep 90). Stories generated from BIG BADGE CHALLENGE I (RN Patrol Service-Minesweeping and Asdic) are on Pages 7 and 37 of this Edition.