

REMOTELY  
OPERATED  
VEHICLES FEATURED

# MINEWARFARE AND DIVING



VOLUME 1

NUMBER 3

1 SEPTEMBER 1990



Portsmouth - Home to the "Hampshire" Hunts - Page 14

ARMY DIVING  
EQUIPMENT  
REPORT

# MINEWARFARE AND DIVING



THE MAGAZINE OF THE  
MINEWARFARE AND DIVING COMMUNITY

*Front Cover: Once again Portsmouth provides the backdrop for the famous Hampshire Rose as HMS HURWORTH of MCM2 proceeds to sea.*

VOLUME 1 NUMBER 3

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## Foreword



By  
**Admiral Sir Benjamin Bathurst, KCB**  
**COMMANDER - IN - CHIEF FLEET**

*In the past six months Minewarfare and Diving has been subject to my close attention, both as CINCFLEET and, in my NATO capacity, as CINCHAN.*

*In February, I visited several HUNT Class MCMVs in Rosyth and I witnessed the inauguration of the new NATO MCMV Operational Sea Training (MOST) facility in Ostend. In March, the Superintendent of Diving gave me a full brief on DSSCCD and its present problems. In May I attended the handover of COMSTANAVFORCHAN from the Netherlands to the German Navy (with HMS HURWORTH presently representing the RN in that force). In July I inspected the Fleet Diving Group and the Diving Section of the MDDS Faculty of SMOPS.*

*In Diving, as in all aspects of our work, safety is critical but the unforgiving nature of the underwater environment adds an extra dimension. My visits have assured me that standards are being maintained at the highest level. Despite shortages of crucial stores, frustrations due to the temporary bar on certain commitments and the uncertainty of the changing political climate, the morale of personnel remains high.*

*My message to those involved in Minewarfare and Diving is simple: you work in specialist fields, in a potentially dangerous environment. Whatever outside pressures you may be working under, do not compromise your standards and DO PAY CLOSE ATTENTION TO YOUR SAFETY.*

# MINEWARFARE AND DIVING



## EDITORIAL

**Frustration and disappointment are two sentiments closely associated with this edition (Volume 1 Number 3) of "Minewarfare And Diving" Magazine. The frustration is that felt by the Editorial Staff due to various restrictions imposed during the past six months and the disappointment is caused by the subsequent publication delay of 4 months: our apologies to all our readers for that, but we hope the final product still meets with your approval.**

We set our target publication dates of 1 January, 1 May and 1 September so as to match the MDDS Faculty term dates and associated staff workloads. These dates also allowed time for printing and distribution to take place during leave periods, thereby matching the involvement of the respective Editorial staff throughout the training year. The decision to produce 3 editions per annum was a bold one, as we had no firm idea what the response would be, let alone what the readership contributions to future editions would provide.

As it is, response and contributions have not been a problem - quite the reverse in fact, as most of the Letters To The Editor reveal. No, it was the removal of billets that hit us hardest, for we have now lost our Assistant Editor, PO(MW) Dave Jordan of the RNR, our Typesetters, Wtr Johnson and AB(MW) Waterton, our Diving Reporter, AB(D) Maddison, and, albeit on a temporary basis, our publisher Cdr Tim Hildesley and Minewarfare Co-Editor Tony Silva. The first three mentioned formed the team who convert the written word, as received by post, to the draft page ready for editorial "cut and paste" by the various Section Editors. It is a time-consuming task, even with a line scanner, a PC with Desk Top Publishing software and a photocopier! We undertook to produce the "camera-ready copy" ourselves, so as to halve the production costs of the magazine. This we achieved with the second edition, having trained up the staff, but it may prove a bigger hurdle in months to come. We remain positive in attitude, but must wait and see how things further develop. For the next year at least though, we shall, regrettably, have to drop to only two editions, in June and December.

The literary prizes awarded by Jane's Information Group have certainly supported our aim of "contribution by incentive rather than coercion", for the quality and volume of material has been staggeringly high: far higher than we ever anticipated. Our thanks go to those who have already contributed (indeed, some of the Exchange Officers have almost achieved "Foreign Correspondent" status!) - and congratulations

to the winners for this edition as detailed below. To those who have written asking for a column on a particular subject, such as the several bidding for a regular "Ship's Diving Team" slot, the reply is: "Delighted!". The total input for this edition alone is twice what we had for Vol 1 No 1 and we are already pagesetting the main feature articles of the next edition, so please keep it coming chaps!

Apart from the loss of so many editorial staff, without relief, and the increased workloads imposed on others, the magazine itself has altered little in style. You will no doubt notice the absence of coloured highlights running through the magazine. This is a MoD-wide printing penalty imposed as a short-term savings measure. CS (Rep) S have been more than supportive to date but, without your written support, the reintroduction of such highlights in any future edition will be very hard to justify, in this or any other such periodical.

Safety, in Minewarfare and Diving operations and training, continues to guide us in our selection of articles. The review of various events, some of which have achieved national and international media coverage, will continue - when we went to press, most of the Minewarfare and Diving events in the Middle East, though very topical, were not publishable due to their inherent classification. We would hope that by next summer, some "Safety Lessons Learned" may reflect operations that have occurred, so that non-involved readership may benefit.

The scope of the magazine's distribution continues to expand: we are now established reading in 207 RN, RNR, RM, RE and RMAS units and in 17 international MW and Diving establishments. Our thanks go to those units and authorities who have been able to reduce their required quota, thereby allowing us to meet requests from other organisations without increasing our publishing total of 3000 copies per edition.

Times are uncertain, finances are tight but the need to review our equipments and safety regulations is ever present. In this edition there is an emphasis on Underwater Engineering and Remotely Operated Vehicles (ROV's). If there is a subject that you feel needs coverage, please use the pro-forma on Page 36. Indeed, why not put pen to paper / PC to print and submit an article yourself?

Finally, as we approach 1991 and begin the search for a New Year's Resolution to adopt, why not consider the maxim in CINCFLT's Foreword? - "DO PAY CLOSE ATTENTION TO YOUR SAFETY"



● Commodore DC Hebron, The Commodore HMS NELSON, on behalf of Jane's Information Group, presents Captain Bill Dainty RE with a prize certificate for the 1990/91 Jane's Infantry Weapons Yearbook for his Main Feature article on Army Diving Equipment (Page 12).



● CPO (D) Paul Leader, representing PACDU, receives his prize from Commodore Hebron. One year's free subscription to Jane's Defence Weekly goes to PACDU for the best photographic contribution in this edition (Russell Tatt's article on Medway Clearance - Page 21)

# CANADIAN MCM

by "Dan" Nicholson

Gentlemen (and remaining members of LMCDO 69),

Having been over here since I left Admiralty Research Establishment in Southwell, in July last year, I thought it was about time I communicated with 'The Old Country'. I was given some extra motivation from the prototype MAD Magazine where I read the request for an article from Canada in the opening comments. Also, Dave Carey threw out such a succinct invitation to contribute at last year's MCD Conference, how could I refuse?

I must first say just how impressed I am with the team's efforts in producing the New Look Mag. I should also report that the Canadians are also very impressed with it. Who knows - we may see, in the fullness of time, an equivalent publication out here.

Those of you with good memories (I hate you all) may recall that the Nicholson family (not to be confused with the younger in years but older in looks Simon Nicholson and family) is currently the victim of their third exchange posting to foreign parts. Despite the assegaes aimed at a point between my shoulder blades I can say that, so far, I hold no regrets that we took these opportunities to travel abroad. Grab the chance while you can. I think we're out of the running for any more so there should soon be considerably increased odds of other MCDs going to Charleston, Sydney and Ottawa.

Anyway, that's the end of the adverts. There are many reasons for wanting to contribute to the new mag - the main one being to keep in touch with the fraternity in the forlorn hope that some of you may want to reciprocate (or even visit)? I also want to give those of you who haven't had the privilege of serving abroad on exchange, a sniff of what life's like working full time with another nation's armed forces. But in my initial contribution - Canada's Navy and MCM.

By way of a background, I should add at this juncture that the Canadian Navy dropped the 'Royal' some years ago and is now known simply as the Canadian Navy (CN) which is part of the Canadian Forces (CF). CN members are no longer seen in the green uniform which was worn during the period when all three service arms were combined. The blue uniform is back and is very similar to our own except that square rig is no longer worn by any ratings.

## The General Situation

As with the defence forces of most countries, the money to procure new ships and equipment is hard to come by. There are few nations with such a mammoth task of Coastal Defence as Canada. Mix together thousands of miles of coastline on 3 sides of the World's second largest country, vast inland waterways, a comparatively small taxpaying public and a relatively low visibility in the public eye - these are some of the difficulties facing the Canadian Navy in the 1990s. Add to these observations a realistic mine threat and what does Canada do?

Canada has embarked upon an ambitious programme which will stretch well into the next century. The cornerstone of this is the Naval Reserve Minecountermeasures Project (NRMP). Amongst other facilities this will provide 12 Maritime Coastal Defence Vessels (MCDVs). These will be equipped largely to carry out Coastal Defence as their primary role but will also be fitted with a credible MCM capability.

The first hull is due to be launched in mid-1993 and, as with all other Canadian Reserve vessels, they will be designed for and complemented to carry a mixed gender crew. After Coastal Defence the priorities for their MCM employment are route survey, mechanical minesweeping and minehunting. The task of organizing, crewing and operating these vessels will be vested in the Naval Reserve. Sea training centres will be established on both east and west coasts as well as numerous Reserve Training Centres across the country and on the great lakes. There will also be a Fleet School in Quebec City where the formal training will be given to Reserves.

The aim is to train as many Reserve Force personnel as possible in all aspects of MCDV operations so that if there is a threat to Canada's sovereignty, the trained personnel would be able to crew STUFT and COOP vessels at short notice. So, the 12 MCDVs and the short-notice STUFT/COOP vessels will provide 2 levels of operating expertise. The third level of the 3-tier concept is planned to be a number of sophisticated, single-role minehunters. These will be operated by the regular force to provide the leading edge in Canadian MCM into the next century.

In preparation for this ambitious programme, two ex-offshore supply vessels have already been purchased and commissioned. These are HMCS ANTICOSTI and HMCS



MORESBY. The ships will be equipped with Wire Sweep Mk9 (Deep Armed Team Sweep) and Wire Sweep Measuring Equipment (WSME), in the same configuration as the UK's RNR River Class MSF's, and a towed side-scan sonar suite to train their Reserve crews in route survey. These 2 ships will continue to be based at Halifax, Nova Scotia and will undergo their conversion to proper Minesweeper Auxiliaries (MSAs) in late 90/early 91.

Those readers who have a smattering of geographical knowledge will realise that Canada is a vast country, particularly in its east-west dimension. This places severe restrictions on the ability of reservists in the west to avail themselves of the east coast MSA training facilities 3000 miles away! In an attempt to rationalise this problem and to give the west coast a training capability, a very capable, towed ROV system called MANTA has been purchased and fitted into a small naval auxiliary vessel.

Once accepted into service, this system will serve as the basis for MCM familiarisation training in a similar way to the MSA on the east coast. MANTA is crewed and operated by Reserve personnel.

Exciting stuff? Yes it really is. Although there is an impressive history of Canada's involvement in minewarfare in WW2 the Canadian Navy has not done any MCM since before 1964 when the remaining 6 Bay Class MSCs (very similar to our TONs) were de-equipped and converted to patrol vessels. The BAY Class have since been used for

*Continued overleaf*

*Continued from previous page*

Junior Officers' Navigational training on the West Coast and, like the TONs, are old and getting very tired.

**The Present**

Two civilian contractors are presently preparing their competitive submissions in response to the specification they were given last year. Submissions will be assessed during August and, in early 1991, a contract will be issued. The winner will become the prime Contractor and be responsible for the design and build of the 12 vessels over the following 5 years (1993-98) and all the other aspects of the contract.

I hope to be able to give you all a more complete update at the MCD conference later this year. In a parallel activity, plans are being made for new Reserve bases and, included in the NRMP, are other smaller side issues, like exercise mines and replacement diving gear for the port diving teams

So, that's the Canadian way ahead for MCM. It is particularly exciting to be here on exchange duty at this time and I am privileged to be working in the Requirements Directorate where much of the future planning for naval ship equipment is carried out.

I cannot understate how brave and ambitious this programme is. Canada has not done any MCM for more than 25 years. There are no

current fully equipped MCMVs and in the regular navy there are very few officers or ratings with MW training.

The reserve forces have a smattering of specialist knowledge gained either in UK, with MCM10, or from courses. Also, Canada has the great fortune not to be constrained in its MCM conceptual thinking by any previous doctrine or design. From this position - the only way is up!

Some retired or retiring elder brethren of the RN MW community might see this as the opportunity to re-invest their deep MW knowledge, but I must state quite emphatically that neither the Canadians nor I have any intention of 'poaching' anyone else's valuable pool of expertise. Having thus cleared my yardarm, if anyone has any such intentions I advise you to first have a long talk (preferably in French!) to CPO(MW) Jumper Collins of MCM10 Staff.

**The Job**

After a faultless turnover from my good friend Lt Cdr Martyn Holloway this has been a very busy and hard working period with a fairly steep learning curve. Those ex - MOD(UK) warriors will understand the frustrations of the bureaucracy, but add to that 2 more languages ('French' and 'Canajun, Eh!') and a complete new set of acronyms. I was briefed to say "It's fun" and it is.

Fortunately, it has not been all work and no play and I have managed to travel quite extensively. In addition, the local ski facilities (15 mins from the back door of work) have taken a fairly severe hammering from the flailing limbs of this 45 year old novice on planks! (Eddy the eagle has nothing on me). Now the snows have departed, the rivers and lakes unfrozen and their waters quiver with anticipation for my cedar strip canoe and fishing techniques.

But more about the extra-mural activities in the next instalment. Suffice it to say that the family and I are very much enjoying Canada, and in particular, Ottawa.

If this article gets the space it undoubtedly deserves, my thanks to the editorial staff for correcting the smelling mistakes and for squeezing it in between all the other worthy efforts.

I wish you all the best of luck in all your endeavours - particularly the equipment procurement program and the future of our 'discreet' branch. From a fairly well travelled point of view I can tell you that the MCM expertise of the RN is held in very high esteem by virtually all other nations' defence forces. Never forget - the eyes of the world are upon you! End of sermon.

**Bonne Chance!**



# On The Blackfoot Warpath

*As a follow-on article to a "Letter From Canada", what could be more apposite than one referring to the Calgary-based Blackfoot tribe?*

*The response to the enquiry by Dixie Dean (Vol 1 No 2) as to the origins of MCM 4's "Blackfoot" crest has been overwhelming. In retrospect, we should have run his letter as a "Big Badge Challenge"!*

*Printed below is one of the many replies: more can be found on page 34. Each one chosen for publication was selected on its own historical and/or humorous merit.*

*The question, we believe, has been fully answered - that is, unless you know better or unless MCM4 Staff would wish for more details?*

**Dear Editor,**  
**ORIGINS OF THE BLACKFOOT**  
"Dixie"Dean's letter on this subject, prompts me to try, at least partially, to answer his question and to let you know about some subsequent developments.

In August 1959 I took command of the Inshore Flotilla which then consisted of HMS Woodbridge Haven and the IO4th and 108th squadrons of CMS, based on Sliema Creek. The IO4th's funnel badge was the 'Blackfoot' as shown in your illustration. My predecessor, Captain "Fish" Dalglish, told me that it had indeed originated from the sooty footmarks carried all over the ship after people had walked in the grimy black deposit from the main diesel engine exhausts. Precisely who suggested the badge and when I do not know.

I do know that in the wake of the adoption of the Blackfoot badge fraternal greetings were exchanged with the Calgary-based Blackfoot tribe of Canadian Red Indians. In fact I inherited a sizeable pack of correspondence between Captain I.F. and 'Big-Chief-Shot-on-both-sides' and continued happily to exchange learned memoranda on minesweeping techniques for the latest family news 'from my teepee'. (By an extraordinary coincidence I later found that a distant cousin of mine was the only known speaker of the Blackfoot dialect in the UK.)

In September 1960 I handed over the Inshore Flotilla, then consisting of 'Woo Ha' and the IO4th CMS Squadron, to Captain Davenport

in Singapore and did not expect to hear anything further about Big-Chief-Shot-on-Both-Sides. I was wrong. In 1963 I happened to be on a course which included a visit to Calgary and felt I had to call on and pay my respects to my former pen pal, Big-Chief. To my surprise the local authorities blankly refused to allow me to do so. They had just had a blazing row with the Blackfoot over the latter's apparently excessive charges for staging the usual genuine Red Indian village sideshow for that year's Calgary Stampede. For the first time ever the Blackfoot were sent packing and took to the hills where they staged a rain dance. From their point of view this was highly successful as, again for the first time ever, the Stampede was washed out by a torrential downpour and it would have been far cheaper for the organisers to have paid the Blackfoot what they asked for in the first place. So I never connected personally with Big-Chief. He died several years ago and was succeeded by his son, 'Little-Chief-Shot-on-Both-Sides'.

Yours sincerely  
**Admiral Sir Anthony Griffin GCB**  
**Moat Cottage**  
**Bosham**  
**West Sussex**

# Diving Round Up



## USN Underwater Ship Husbandry

by Chris Sherman



In February 1989 I arrived in Washington DC to become the first RN Exchange Officer to serve with the Naval Sea Systems Command (Code OOC), usually referred to as NAVSEA (OOC). This organisation has about 55 military and civilian staff, and is headed by a Captain USN, who is Supervisor of Salvage & Diving, and Director of Ocean Engineering. I work in the Underwater Ship Husbandry (UWSH) Division, and the aim of this article is to give a brief overview of the US Navy's achievements in this field.

What exactly is Underwater Ship Husbandry? The US Navy defines it as:- "The inspection, grooming, maintenance, and permanent repair of Navy hulls and hull appendages while those hulls are waterborne."

The key word here is *permanent*. While divers have been carrying out underwater repairs for many years, these have usually been of a temporary nature, requiring reworking in drydock. Permanent underwater repairs are equivalent to those completed in drydock, and involve the same degree of quality assurance (QA).

The UWSH programme has been in existence for about 12 years, and has grown rapidly in size and scope. The main objectives of the programme include extended drydocking intervals (5 - 7 years), improved fleet readiness, and reduced maintenance costs. NAVSEA (OOC) is responsible for the development of procedures and equipment for an ever-expanding range of Underwater repairs. Strict quality assurance is an integral part of this programme.

The UWSH Division is working to influence future ship designs to facilitate diver maintenance, and also has some input into the training of Navy divers. This is of particular importance. In many areas, new technology has left the Navy diving community behind, and as a result, many underwater tasks are carried out under contract by commercial divers. This includes hull cleaning, ultrasonic hull thickness measurement, sea chest installation, masker air belt repair/replacement, and underwater welding. Navy diving teams still do a lot of UWSH work, including propeller changes, submarine sonar transducer changes, sonar dome



● *USN diver, wearing Mk12 surface supply rig, cutting with Oxy-Arc in a training tank.*

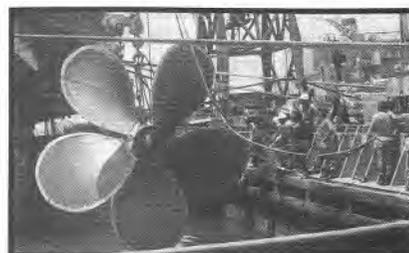
repairs, shaft bearing inspection, and a number of other tasks (see Buck Taylor's article in Vol1 No2). The ultimate aim of the UWSH programme is for all underwater husbandry, with the exception of hull cleaning, to be conducted by Navy divers.

1990 has seen an important step in that direction. This year, diving training courses for Second and First Class Divers are being revised to include formal UWSH training. NAVSEA is actively involved in this process, and has been tasked to provide underwater training aids. Future US Navy divers will receive theoretical and practical training in the use of underwater tools, rigging, video inspections and basic repair techniques. Less time in the water will be spent "blowing bubbles", and more time completing practical projects. Underwater tasks will include removal/replacement of a propeller boss nut, cofferdam installation, and the replacement and pressure testing of a flange seal.

A number of smaller projects will give the divers experience in using tools underwater. These will be carried out in a training tank to enable instructor observation. Larger projects will be completed by teams of trainee divers in open water. Throughout this training, great emphasis will be placed upon the importance of quality assurance. Divers the world over are renowned for their resourcefulness and "can do" attitude. However, while tie-wraps and masking tape might be OK in an emergency, a permanent repair requires a more scientific approach. The end result should be a more technically competent diver and underwater worker.

It is hoped that the introduction of formal UWSH training at this level will increase the capabilities of Navy diving teams, and allow them to do more and more work in this field. Ultimately, when funding permits, an advanced ship husbandry qualification will be introduced, with specialist training. Selected divers are already being qualified as underwater welders, and NDT training is being formulated. All of these skills are available in the offshore oil industry, and it is simply a matter of adapting them to Navy requirements.

There is a growing awareness within the non-diving world of the potential for underwater repairs. The successful waterborne propeller change following the grounding of USS ENTERPRISE in 1983 marked a significant milestone in the credibility of such work. Subsequent successes by Navy and commercial divers, coupled with persistent staffwork by NAVSEA (OOC) personnel, have gained recognition and funding for the future.



● *USS ENTERPRISE waterborne propeller change 1983*

UWSH is a growth industry. By developing procedures, acquiring tools, and training divers to use them, the US Navy is saving millions of dollars in ship maintenance costs. In 1989, NAVSEA staff or contractors assisted in 25 major repairs, saving an estimated \$10 million in docking costs. In addition to saving money in peacetime, the Navy is also improving its ability to repair damage sustained in battle. In today's harsh economic environment, the US Navy's diving community is both expanding its capabilities and justifying its existence from a financial viewpoint.

***Shouldn't the Royal Navy's Diving Branch be doing the same?***



# Diving Safety



## "A COMEDY OF ERRORS"?

by Charlie Wilson

**The following cautionary tale is based on a live incident that happened in 1989. It has been reconstructed using recently released documentary evidence, extensive interviews with those concerned and a liberal amount of Laphroaig.**

The pale sun broke through the clouds hugging the Mull of Kintyre just as the first catch of the day was coming onboard. Nestling among the silver of the fish was a large, dark object which caused something like the following conversation between the Master and his deck-hand.

"Warra fu' za', Tam?"

"Ah dinna ken."

"Aheugh aheigh arubut a fuggin mine an a' mon. Aheugh aheigh ah call the Faslane Divers. Areet pul'?"

"Nae bother."

And so the fishermen called the coastguard, who contacted the EOD Reporting Centre at Didcot, who called the Faslane Team. The Team were heavily loaded at the time (as were SNICDU) but, since the object had been recovered inboard, no diving would be required and so an EOD Operator plus one were despatched.

The EOD Operator had taken a description of the object over the 'phone, decided that it sounded like a practice mine and said that he would meet the fishing boat at Largs. When he arrived, the boat was waiting alongside for him.

Imagine his surprise when he saw the object in question, now comfortably chocked against the gunwales with a smashed fish-box; the last time he had seen a World War Two German GD mine was outside the museum at DEODS - the Bomb Disposal School in Kent. A quick look round revealed that he was not alone in his interest however, because the Arran ferry was just pulling in and all the people queuing to embark were watching him closely.

Having made a few 'phone calls while the jetty was being cleared, the EOD Team embarked and set off in the fishing boat for some quiet waters. (Although they had brought a Gemini with them, it was too rough to use it and so they decided to do the job from the fishing boat.)

In the shelter of Great Cumbrae the charges were attached and, with the help of the crew, the mine was lowered over the side. The Master having been briefed, the fuse was lit and they retired to a safe distance.

Nothing happened.

How do you pass the time in a fishing boat in the Clyde without an interpreter?

After waiting 10 minutes, a second initiation was attempted. This time 2 fuses were lit and the fishing boat reversed, swung round and headed away at best speed.

She had only gone 150 yards when the mine exploded.

The Master issued a shortened version of the statement, "Goodness gracious me, we appear to have sprung a leak in the engine room!" and sent a MAYDAY before beaching his craft on Great Cumbrae.



They were rescued by a lifeboat and the only injury sustained was a bang on the knee by one of the fishermen.

The dust settled, the Board of Inquiry sat, blood was let, wrists were slapped and, at the time of writing (some 12 months later), the settlement of the fisherman's claim is still rattling around the legal pipe-work in London.

**What is more important is that there are lessons to be learnt from this incident, the scenario of which could happen to any one of us tomorrow. They are:**

### **ASSUME THE WORST**

Don't be suckered in to trying to identify ordnance on a second/third/fourth-hand description. We have to react to these but

must assume it is live and dangerous until we have seen it, measured it, gone through AEODPs, telephoned EODTIC on our new cell-phone and convinced ourselves that it is practice. Until this has been done, make sure that it is being treated as live.

**MINIMISE THE RISK**

The fisherman should have known not to bring the mine into harbour: Admiralty Annual Notice to Mariners is very clear on what to do on trawling ordnance.

However, you should be ready to tell him what to do. (He has probably got a cell-phone too. If not, use the Coastguard).

Do you have a copy of the relevant N to M by the Duty Diver's telephone? Is there one in the EOD wagon?

The best option is usually for him to lay off and for you go out to meet him by Gemini. This advice is liable to be unpopular if the fishing is good, but the MoD pay compensation. If it is too rough, get him to lower it into diveable depth, away from any shipping lanes or land (consult with the Coastguard), and then buoy it.

Do not use the fishing boat to conduct the countermining and do not use the fishermen to assist.

**DON'T GET CARRIED AWAY**

We are all great ones for getting stuck in and getting the job done. We must, however, retain the ability to step back and make sure that our enthusiasm is not leading us to cut corners on safety.

If you do not have the people to do the job properly then assess the priority of the EOD task against all the other things that are going on. If necessary, pull people off less important tasks or wait until more important tasks are finished. Then you won't be tempted to borrow fishermen to help.

Is the EOD task that urgent? Is it life-threatening? Could the ordnance be put somewhere safe (ie back in the water with a buoy) until you have the resources to tackle it properly? If the weather is too rough to use a Gemini is it too rough to do the job? Again, could it wait?



*"...How long should you wait after misfire of chemical initiation?..."*

**KNOW YOUR BASIC DRILLS**

When would you use double initiation? How long should you wait after misfire of chemical initiation?

**CHECK YOUR FUSE LENGTHS**

Get your Number 2 to double check your sums for burning time and watch you cut the lengths. (This was done on this job.) Allow a minimum of 5 minutes.

We can afford to be light-hearted as no one was hurt in this incident. There must be other stories out there, waiting to be told, which could help all of us learn from mistakes made and so help preserve those who make their living in this slightly dodgy specialisation of ours.

All that remains is to present the EOD Operator with the "Bismark Award" for the greatest tonnage of British shipping sunk by German ordnance since WWII, before leaving the last word to our fishermen friends:

The sun had been up for hours, baking the planking of the yacht snubbing gently at her mooring, as the scantily-clad native girl hauled up the net, full of cans of McEwans that had been cooling since dawn. Our friends had invested their compensation money well.

The Master emerged, stretching and yawning from the cabin and grinned at the deck-hand, who was being manicured by 2 more native girls.

"Areet pul?"

"Nae bother"

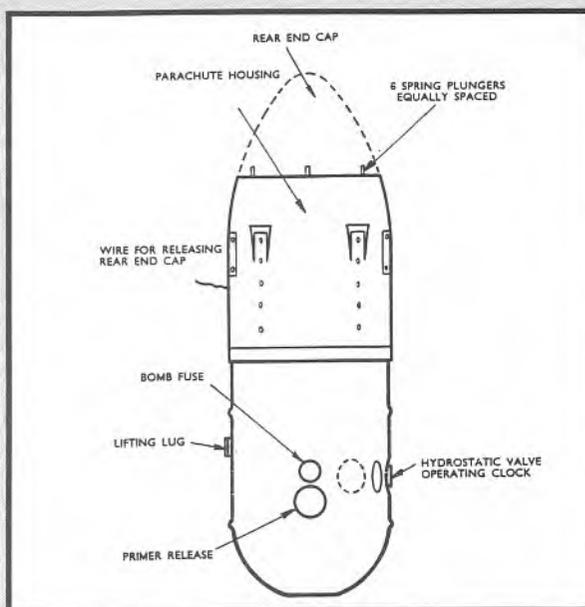


**The German GD Mine**

Laid from aircraft by parachute, the GD Mine is the fourth in the successful 'G' series of Second World War German mines. Coloured black or green, cylindrical in shape with a blunt hemispherical nose, this weapon is 26 in (0.66m) in diameter and 68 in (1.73m) in length. Excluding the neat tail-end cap, which parted from the mine on being released from the aircraft, this mine is shorter than its forerunner, the GC, by 36in. The case is made from aluminium alloy or plasticised pressed paper and contains 676lb (306kg) of Hexanit, giving a total weight of 1173lb (532kg).

Fitted with magnetic, acoustic, or combination influence assemblies, the mine could also be actuated on time delay or used as a depth-charge. The Luftwaffe used hundreds as blast-effect bombs during the Blitz.

The first GD was recovered in July 1940 on the mudflats of Liverpool Bay, by Lt J E M Glenn RN. Mines of this series are still disposed of by Clearance Diving Units at the rate of 12 per year on average, giving some idea of the number of mines dropped around UK waters. Of robust construction, and despite having totally dead batteries after 50 years submerged, the size and sensitivity of the often deteriorated explosive charge demand a very healthy respect for these weapons.



# Minewarfare Reporter



● *Minewarfare Reporter*  
*Wally Vassie*

## EI MRMH?

Vosper Thornycroft Ltd and the Spanish shipyard Empresa Nacional Bazan have signed an agreement for the construction of several MCMV's for the Spanish Navy. The Spanish yard is building a version of the Single Role Minehunter (SRMH) being built by VTL for the Royal Navy. The new vessels would be fitted with two PLUTO remotely operated vehicles manufactured by Intermarine of Italy.

A first batch of four minehunters and four minesweepers will be built with the same design of GRP hull and Voith-Schneider propulsion. The first ship should be completed by 1993 and the first series is scheduled to be operational by 1995, with a second series making a final total of 12 units.

the fact that, by attaching the line to the ship's structure and fittings, they were picking up all the vibration from the ship so causing interference on the line. The net result? Not a thing was heard.

With that idea being a non-starter, we again had to turn to the WEO, who, with a flash of brilliance (something for which he is not normally known), came up with the idea of using the baby alarm normally run between the Jimmy's and Op's cabins.

So, on to Plan "B". Lt Hill disappeared out of the Ops Room at a great rate of knots and came back a few minutes later with a two-way intercom-come-baby alarm which he had bought a couple of weeks earlier.

It did not take long for the WEM(O) to run the connecting wire out of the Ops Room, up the ladder to the Wardroom Flat and then onwards to the Bridge. Would the second attempt to sort out our problem succeed? With all spectators watching with bated breath, the first transmissions were made. To everyone's amazement, not least Lt.s Hill and Godfreys', the system actually worked!

The new system has been in place for over a week now without any sign of a fault occurring. It just goes to show what can be achieved when you let a muppet and a bubblehead take over from a tiff and his boy.

At present we are alongside in Troia, Portugal, with a defective port main engine awaiting a replacement from the UK. While we are waiting, the Divers and MWs on board are trying to devise a way of rectifying the defect using some short scope rubber, some cable ties and a copy of the 1968 edition of the Blue Peter Annual.

I will keep you all posted on the outcome in the near future.

## FLOM 7/90

All Divers in COMMW's organisation should by now be aware of FLOM 7/90 dated 8 Nov 90: It covers the reintroduction of Mixture diving in the MCM flotilla.

If you're a Diver and you haven't seen it yet, make sure you do soon.

PS: So Divers do read this page!

## Polyolefin Ropes

I would like to report on the polyolefin ropes now carried onboard MCMV's: Since arriving on board as Bosun in January this year, I have had to demand, sometimes without warning, at least seven new berthing hawsers due to what would normally be considered very minor damage escalating to critical point through further use.

It would appear that the strain being placed on these ropes during berthing and unberthing places undue strain on any small nick or cut, so weakening the rope at the faster rate.

On speaking to my opposite number onboard, I find that in the 9 to 12 months prior to my arrival on board, a further 10 polyolefin berthing hawsers were abandoned through damage whereas our two remaining polypropylene hawsers, which have been on board for almost eighteen months, are still serviceable.

The wastage on these ropes must be high, as I have talked to some of the other senior rates on board other MCMV's as well as to the riggers in Rosyth and they all agree that there would appear to be a problem when using polyolefin berthing hawsers.

The one other major problem, apart from the life span of the rope is the inability to surge or render around bollards or drum-ends - a thing that is needed when berthing and unberthing. The fact that polyolefin tends to melt when friction between rope and drumend is high does not fill me with confidence when coming alongside.

I look forward to any comments from staff or other users in the near future prior to rendering my S.2022 !

## The Saga Of The Openline

During CHIDDINGFOLD's recent deployment and participation in Exercise Open Gate '90, a terminal fault occurred on the Open Line between the Bridge and Ops Room. After much thinking and scratching of the head by the WEO and his boy, the job of setting to work on a new system was undertaken by the Ops Officer (Lt Kim Godfrey) and the XO (Lt Richard Pusser Hill).

Within minutes the Gruesome Twosome had come up with what they thought was a first-rate idea, but would it work? - that was the question. There was only one way to find out. Try it.

A call was sent out to the galley and within seconds the cry for help was answered. The Duty Chef came to the rescue with two empty baked bean tins. The Buffer also played his part in this attempt to rectify our shortcoming by supplying a length of gunline to run between the two tins. The knots were soon tied and it was time to trial the new Openline System.

With the Bridge Watch Keeper primed and ready, Kim Godfrey made the first epic transmission on the new gear. "Did it work?", I hear you ask. What do you think? With the Gruesome Twosome on the job, it was doomed before it even started.

Our two budding scientists had overlooked

## Diving Drills Update

There are a couple of drills, with respect to DSSCCA, which bear restating before the next change to BR 2806 hits the desk.

1. Divers arriving on the surface have been observed, indicating they are well with a low, limp thumbs-up; this is hardly noticeable to a supervisor.

Keep safety in mind.

The correct method is a **straight arm, raised clear of the water** clearly indicating the diver is well. In addition, raising the arm prior to surfacing will also protect the diver's head - BR 2806 Art 6423.

2. As a result of an oversight there is no Surfacing Drill for DSSCCA. The only drill which can be practised to take the diver off air is the "Emergency Ascent" drill. A

new Article 7405 will contain the prescribed drill.

3. **Companion Diver Drill** - Article 7414 has been updated in Change 3 to include other actions being taught to divers which are not currently written down, such as "Approaching from behind".

The Diving Manual is updated once a year. Change 3, which is now being printed, does include some major amendments. Make a point of updating yourselves when the Change becomes effective, especially the articles with black lines in the margin which denotes a recent change has taken place.

**A SAFE DIVER IS AN INFORMED DIVER**



● *Diving Reporter  
Simon Maddison*

## SofD in date for minutes

Prior to his departure from the appointment of Superintendent of Diving, Commander Jon Riches expressed a desire to dive in the Siebe Gorman standard diving equipment.

To enable him to achieve this ambition the Royal Engineer Diving Establishment at HMS NELSON (Gunwharf), who train the Army's divers, took him under their wing and put him through his paces.

Following a careful check of his diving log book and a full brief by the Army Diving Supervisor S/Sgt Gus Honebon and Civilian Instructional Officer Mr "Dusty" Miller - himself an ex-Navy Clearance Diver - Commander Riches carried out a buoyancy recovery task in the old VERNON Creek.

His next appointment is with the Commodore Naval Ship Acceptance Department at MOD Bath, where he will have little opportunity to get wet.



● *Lt Col Roger Mundy RE (SofD Army) presents Cdr Jon Riches with a small memento to commemorate his dive.*

## Port Divers' Report

by A C Main

The argument on different sets and contents gauges has long raged within the Inspectorate but, in the final analysis, there are five main points we would consider most valid in favour of full face masks (FFM) and upside down bottles. These are:

- To cater for conditions of total NIL visibility when a contents gauge would be unreadable.
- An FFM gives good cold protection.
- A civilian second stage mouthpiece can be pulled from the mouth in heavy kelp or by a snag.

d. An unconscious diver still has a mouthpiece to breathe air from an FFM.

e. There is less chance or ingesting contaminated water in an FFM.

Having said this, in 75% of all diving situations a good 60/70 cubic feet single civilian bottle with contents gauge and back pack, incorporating a LBJ all-in-one, in conjunction with a "semi-dry" wet suit, is probably the best combination to dive in with a FFM.

A back pack that would allow bottles to be twinned as required, would avoid the need to procure a completely new set.

Semi-dry wet suits make economic sense in view of their low cost and their good durability but UWSS would still be required for cold water work.

If minimum cost were paramount, then LBJ would not be required above 24m. This revised outfit would thus give the best of both worlds in terms of durability and versatility and would be much more comfortable to dive in. Diver comfort and a feeling of 'at one' with his equipment equates to greater confidence and thereby improved safety underwater.

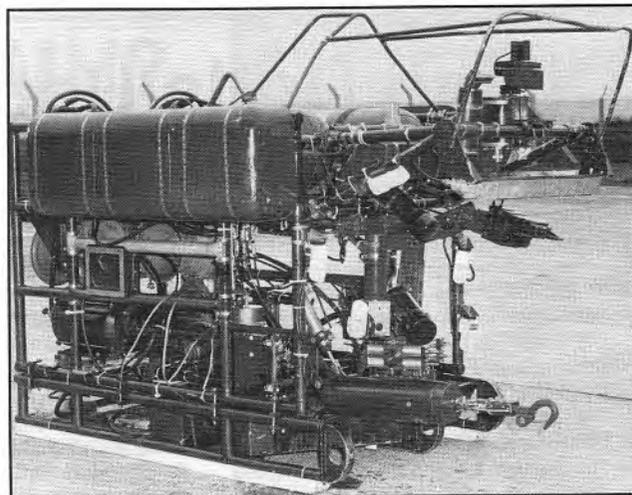
## Remote Report

# SCORPIO

## - The Diver's Assistant

by Joe Cannon

SCORPIO is an unmanned remotely operated underwater vehicle system for subsea observation, sonar search, bottom survey and a wide range of mechanical work tasks at depths down to 3000 feet.



### ● SCORPIO fitted with the Mine Recovery Claw

Normally, adequate deck space, a 'short-stay' deployment method (i.e. articulated arm crane) and 440 volts are supplied by the parent vessel. The primary function of the ROV is to enable an operator to perform deep underwater tasks from the surface, without putting a diver at unnecessary risk and with the added advantage of long working endurance. These tasks are carried out by means of television cameras for observation and video recording, manipulators for physical undertakings (with various tool fitments) and sonar for search and location.

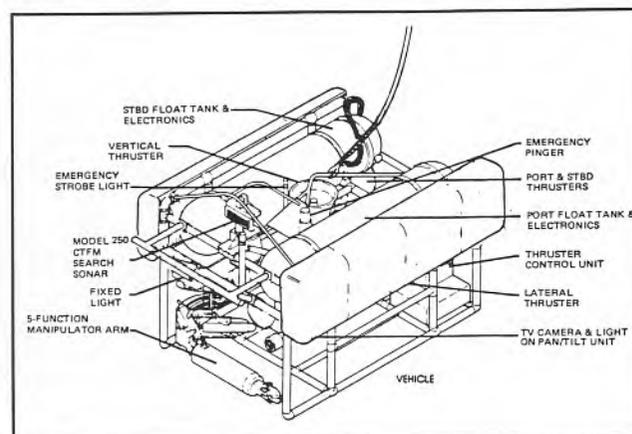


### ● Recovering SCORPIO aboard RMAS SALMAID

Equipment Number 45 of a series of over 90, SCORPIO is manufactured by AMETEK STRAZA, in San Diego, California. It was purchased in April 1983 as a Research and Development tool for Admiralty Research Establishment (ARE) and as a replacement for the 'CUTLET' system. SCORPIO was chosen because of its well proven record of reliability in support of North Sea oil industry.

Since that time it has been based at ARE Helston, in Cornwall, and is operated by a crew of four RN personnel. In 1985 it became the operational ROV for the south coast.

The system consists of the vehicle, the cable winch and the control cabin. As a result of extensive modification, a ship's fit can be effected within four hours.



SCORPIO has been employed in a wide variety of roles, amongst these are weapon recovery, R & D work, aircraft salvage, survey work and part of the submarine rescue package sponsored by the Standing Committee on Submarine Escape and Rescue (SCOSER). To satisfy the SCOSER commitment the ROV and its personnel are maintained at a permanent 'call out' status.

SCORPIO is 'diver friendly' and has been electrically modified to work safely with them. This has been most useful in the 'assist' role. There is also a tracking system which can be fitted to most vessels, further improving the system's capability in the search mode.

Transported on a 40' road trailer, or by air - either internally in a C130 or similar, or as a helicopter underslung load, SCORPIO has a long record of success and its full potential has yet to be fully realised. MoD experience of ROVs in the diver support role interface has been a sensitive subject, but ROV's do play a vital part in diving operations, as the recovery of weapons and equipment from HMS Coventry and the lifting of the Wellington from Loch Ness will verify. Included amongst SCORPIO's many noteworthy accomplishments was the salvage of a Sea King helicopter, in October 1988, and assistance in the recovery of the toxic cargo from MV Perintis.



# THREAT FROM BELOW THE WATERLINE

by John Boatman

*The following article was written by John Boatman, US Military Affairs Correspondent for Jane's Defence Weekly, and is reproduced here courtesy of Jane's Information Group Limited.*

*The data listed and opinions stated, as first published in JDW on 22 September 1990, are those of the author and are not endorsed by MoD(N) at any level. Inclusion of this article is for the topical interest and benefit of those persons whose service sub-specialisation will enable them to draw their own professional conclusions from this independant, unclassified source.*

The US DoD believes that, should Iraq begin a minelaying campaign, it would most likely lay minefields off Kuwait City, by the Shatt al Arab waterway and in the waterway that leads to Umm Qasr.

Planners also fear mining could occur, with co-operation from others, in the Gulf of Oman, Red Sea, Eastern Mediterranean and Suez Canal.

Although Iraq laid relatively few mines during the Iran-Iraq war, US Naval specialists believe its capabilities are significant.

Iraq does have serious weaknesses, however. While it is strong in mine manufacturing, its delivery systems are old and, although plentiful, in the case of helicopters are not entirely accurate.

Some Iraqi mines were supplied by the Soviet Union and Italy, US analysts say. Italy has sold Iraq MISAR's Manta influence bottom mine, which operates at depths of up to 100 m and has a 140 kg warhead. Plastic-cased,

it is difficult to detect without sophisticated countermeasures systems.

Iraq has large stocks of Soviet mines. AMD and KMD series bottom influence mines are prevalent, configured in Soviet use as magnetic, acoustic, pressure and combination influence mines. It is unlikely, however, that Iraq possesses the sophisticated variants such as the combination mines.

Iraq also has Soviet Krabs, the aged MO8 (as in 1908) and MKB-series mines. It has been reported that the sophisticated Stonefish built by Marconi Underwater Systems had also been acquired, but a US source says this is unlikely.

Iraq manufactures three types of mine possibly based on Soviet designs:

There are two versions of the Al-Muthena moored contact mine: the AM-35 (35 kg warhead) and AM-45 (45 kg warhead). They are manufactured with anchor and cable, and also as a drifting mine, illegal under



*"....a drifting contact mine is illegal under international law...."*



international law.

The bottom-moored contact Sigeel has a warhead of about 400 kg, while the Sumer, an acoustic and/or magnetic bottom mine is roughly the same size.

Apart from the above, there is also the unusual Alkaakaa/16 floating/submersible mine

designed to destroy offshore structures such as oil rigs and pipes. It is a 3.4 x 3.4 x 3 m 16 tonne mine, with an explosive charge equivalent to 13 tonnes of TNT. Detonation is by timer or remote control.

Although US officials have a clear idea of Iraqi mine capabilities, they are less certain of quantities because Iraq makes so many.

Iraq's minelaying capabilities include several hundred helicopters, including Aerospatiale Super Frelons and a large number of Soviet-built Mi-8 and Mi-17's. A few Tupolev Tu-16 Badger and Tu-22 Blinder aircraft are also available.

Iraq also has several vessels capable of minelaying: three Soviet-built "Polnochny" landing craft, one T-43 class ocean minesweeper, three "Yevgenya" class inshore minsweepers and three Yugoslav Nestin class minesweepers.

In addition, there are Iraqi and foreign air cushion vehicles (including some UK-built SR.N6 Winchesters captured during the invasion of Kuwait) which could be used. Iraq can also lay mines from a range of other ships, from small dhows to much larger merchant ships.



● A Soviet-built T-43 Minesweeper - also capable of minelaying.

# Diving Equipment Review

## ARMY AGA DIVATOR

by Bill Dainty

### NEW EQUIPMENT REQUIRED

For operational reasons in Northern Ireland it was established in 1972 that there was a requirement for soldiers to be able to conduct search and clearance operations in sewers, foul water cavities and underground installations. The major problem to be overcome quite obviously was the environmentally dangerous gases and foul matter. Diving equipment had to include a full face mask supplying air overpressure to prevent the ingress of contaminants; be rugged enough to survive the likely environment, whilst remaining slim enough to enable the diver to wriggle into restricted spaces and through manholes yet at the same time giving a satisfactory endurance.

The first set to enter service which fulfilled these criteria was the Interspiro AGA Divator Mk 1. It was used in Northern Ireland on internal security duties by 33 Independent Field Squadron, Royal Engineers in 1976.

### Used by Civil Police

At approximately the same time the civil police in the UK were forming professional diving search teams who were chartered to operate in similarly unpleasant environments. Many opted for the AGA Mk 1, the Demand Valve (DV) of which unfortunately developed a reputation for freezing up in low temperatures: some police teams unsurprisingly selected alternative equipments as a result. The AGA Mk 2 was developed to overcome the problem of freezing up and remains in service with several police teams.



● *The AGA Mk2 Divator*

### IMPROVED DESIGN

AGA Divator Mk 2 consists of three components:

- a. Cylinder pack and harness assembly.
- b. Regulator assembly and pressure gauge manifold.
- c. Breathing valve and facemask.

### Cylinder Pack and Harness

AGA has twin steel alloy cylinders positioned in a central cradle secured by stainless steel bands. The twin cylinders are joined by a stainless steel crossover tube protected from damage by the plastic carrying handle. The cylinder valve attached to the left cylinder (as worn) controls the air output of both cylinders. The valve incorporates a ratchet device preventing the valve from being accidentally closed in confined spaces. To close the valve the hand wheel must be pressed in against the valve body and simultaneously turned.



● *Rear View of Cylinder Pack*

Cylinder data is as follows:

- a. Test pressure 450 Bar.
- b. Working pressure 300 Bar.
- c. Water/nominal capacity 4 litres per cylinder.

The cylinder pack is fitted to the stainless steel frame by keyhole slots and a catch. The

shoulder straps of the frame are adjustable and the waist strap incorporates a quick release buckle.

### Regulator Assembly and Pressure Gauge

The regulator assembly consists of a pressure regulator, a high pressure hose and gauge, and a breathing hose. It is connected to the cylinder valve by hand and has an extremely high flow capacity.



● *Mask with Regulator Assembly and Pressure Gauge*

### Breathing Valve and Face Mask

The breathing valve is the demand type designed to give a slight positive pressure (20mm water column) in the mask. It also acts as a safety valve for the regulator.

If pressure builds up to 14 Bar on the valve side of the regulator the valve will free flow until the pressure falls below 10 Bar.

A small lever is located on the breathing valve to allow the set to be turned on without operating the mask positive pressure. It automatically flicks over on inhalation.

The facemask outer and inner oral/nasal unit are made of rubber. The outer mask holds a flat visor with matt sides to prevent optical distortion.

Internally the mask has studs for spectacles and a space for the microphone of a communications system.

On inhalation, air is allowed to flow over the inside of the visor to prevent fogging.

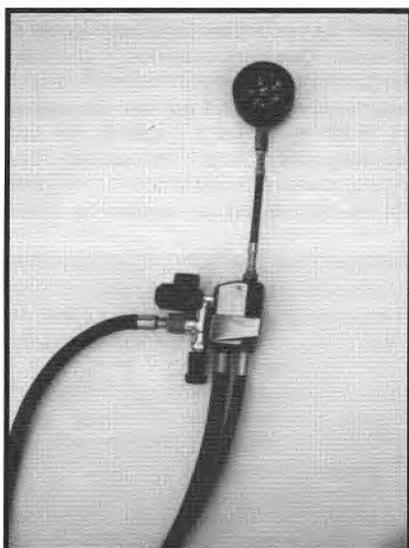
Noseclips are not required with AGA as it has a static noseclearing device built into the facemask.

## INCREASED RESERVE SUPPLY

AGA incorporates a mechanical 400 litre/50 Bar reserve air supply, as opposed to DSSCCA's 25% reserve.

It is operated by a small valve incorporated into the high pressure breathing hose, and clips into the diver's right shoulder strap. The valve will not operate until the set is breathed to approximately 60 Bars.

At 50 Bars the diver comes onto breathing restriction and simply flicks the valve lever over. At this point he must surface.



● *The L-Shaped Reserve Air Supply Lever is mounted next to the Pressure Gauge HP Air Hose*

## HIGH PERFORMANCE CLAIMS

AGA is widely used around the world with military and police services as well as in commercial diving. In its self contained form it is fully capable of working to 60m. This depth also applies when AGA is used with a surface demand panel.

It is claimed to be a simple change over to turn the equipment into Surface Demand Diving Equipment (SDDE) which supplies a diver with air at 6 Bars above ambient.

The manufacturer claims that the AGA Divator in Self Contained Breathing Apparatus (SCBA) form has been satisfactorily tested using gas mixtures at 300 metres and both the demand valve and facemask at 400 metres, in accordance with recommendations by the Department of Energy for "work of breathing" energy valves.

The facemask is extensively used in the

North Sea in saturation diving especially for use when welding since its non-metallic construction prevents "arcing" of certain equipments.

## VARIATIONS AVAILABLE

AGA is adaptable to several variations in addition to the SDDE mode.

It is designed to take a standard Nuclear, Biological and Chemical (NBC) canister filter for above water operations in toxic environments.

The Inspector of Diving of the Royal Engineers Diving Establishment (IDA REDE) recently conducted a successful mini-trial designed to evaluate diving operations in an NBC environment using AGA and was impressed by its performance.

It has also been found that the AGA DV and facemask system is compatible with the RN's DSSCCA replacement set, SABRE.

AGA Divator has a twin equipment - AGA Spiromatic. The Spiromatic is designed for surface work in Explosive Ordnance Disposal and firefighting. Spiromatic works on very similar principles to Divator with an overpressure mask and adaptors for NBC filters. It is usually worn inside a protective oversuit. Although designed for surface use spiromatic can also be used underwater.



● *AGA Spiromatic being worn in conditions of gross NBC contamination, underneath standard NBC Clothing.*

## AGA IN OPERATIONAL USE

AGA equipments are currently issued to several units including the following:

- a. Royal Engineers Diving Establishment
- b. 33 Engineer Regiment (EOD); both Divator and Spiromatic
- c. 33 Independent Field Squadron RE (Northern Ireland)
- d. Tri-Service EOD teams (surface kit only)



● *And of course the best acceptance trial is to give the set to a suitable, qualified diver and see if he is happy with it. Popular with its regular users and those familiar with their own different sets and routines, AGA is a comfortable, safe, reliable diving set. It is not cheap, but then diving safety doesn't come cheap.*

AGA has a deservedly high reputation as a diving equipment but its high price in comparison to existing SCDA equipment makes it unpopular with the MOD.

It is currently manufactured under licence in UK in collaboration with Drager in West Germany.



## Constructive Review

# Across The North Atlantic By Voith-Schneider Propulsion

by Horst Sachsenberg

**Editor's Note:** The following article, first published in Issue Number 49 of "HANSA", on 5 Dec 1953, was found by Lt Cdr Robin Jack, of DGSS Bath, whilst weeding a Pack entitled "OPTIONS FOR PROPULSORS FOR CHALLENGER". Whilst a final decision has yet to be made as to the commercial future of that vessel, readers of this article may care to ponder upon its relevance to the RN's new "Sandown" Class of minehunters, also fitted with Voith-Schneider Propulsion (VSP).

In August and September this year [1953], the Hamburg Daily Press published accounts of the transatlantic crossing to New York of the "R.96". The former mine-sweeper of the German Navy is a wooden vessel built in 1942 by Abeking & Rasmussen and has a length of 36 m and a displacement of 142 tons. It is powered by an eight-cylinder MAN Diesel Engine output reduced to 500 HP which drives both Voith-Schneider propellers by means of two shafts and gives a cruising speed of 12 knots.

I took part in the journey as First Officer. Having served as a seaman hitherto almost exclusively on large screw-driven vessels on long voyages (Horn Line), gaining experience only in this field, I considered the Voith-Schneider propulsion to be one of the weakest points in the whole plan to cross the North Atlantic. The only personal knowledge and experience I had of the VSP was gained during the war, when my flotilla was operating from time to time with mine-sweepers equipped with VSP. Then, I had the impression that in heavy seas these boats were at a disadvantage in comparison with vessels driven by conventional screws. Their tactical operation was always ordered by the commander with special consideration to the weather conditions.

When crossing the Atlantic in the "R.96", however, I noted to my great surprise, several facts regarding the Voith-Schneider propulsion which are certainly worthy of consideration, even if they are of interest to purely maritime concerns only.

From Hamburg, the "R.96" set course through the Channel and the Bay of Biscay in order to take aboard fuel and water at St.Nazaire (France) for the journey to Ponta Delgada

(Azores). During this first part of our journey, we met SW-winds of between Force 4-5 and medium high, choppy seas. The boat was pitching heavily, so that its stern was completely lifted out of the water. Due to the position of the VSP's, however, which were installed in the keel, approximately 5 m from the stern, the propellers remained submerged and the continuous progress of the boat was not limited or interrupted, thus sparing us a critical and very unpleasant experience.

After our departure from St.Nazaire, the small craft was touched by a hurricane. The following sea rapidly increased, became

the Azores to the Bermudas, a distance of almost 2,000 nautical miles. Two days before reaching this group of islands, "R.96" entered a zone of bad weather, with sudden squalls up to Storm Force 10. The situation became critical when the protecting plates on the outside planking of the bows were torn off by the violent seas and the fore-peak was filled with water. Due to the heavy load in the fore-part of the ship, the movements of the vessel became slow and there was the danger that the "R.96" would not be able to ride the oncoming rolling seas. Immediately, the propellers were reduced to pitch 6. The peril that the boat would be capsized by cross



● Minesweeper R.21 - very similar to R.96, the vessel in this article.

higher and more violent and reached a speed faster than that of the boat. The waves towered threateningly, high above the stern of the small vessel and the crew thought themselves to be in a dangerous situation.

Most surprisingly, however, the unique action of the VSP's broke up the high waves over an area covering a distance approximately 10 m astern and a breadth of at least 15 m, and pulled them under the stern without difficulty. Those waves not affected by the propellers passed by, foaming and breaking, on the port and starboard sides of the boat.

The vessel itself lay calm and stable in a valley of water, the walls of which, on both sides, towered like a railway embankment four or five times the height of the boat. The crew, after their original suspicion, very quickly got used to the unusual picture. During the nearly 30 hours journey on the verge of this hurricane, the "R.96" shipped practically no water.

The commander of the ship took advantage of this fact on the third part of the journey from

seas was averted due to the exceptional manoeuvrability of the Voith-Schneider propulsion, the boat turning 180° in a fraction of a minute. Both propellers were set back on pitch 6 and the vessel again lay calm and stable. Now the same phenomenon as during the first part of the journey was observed, indeed much more demonstrative. The mighty following sea was divided and repulsed within the range of the Voith-Schneider propellers, and the breaking waves disappeared already 10 - 16 m astern, just as if one had used oil for calming the troubled waters. This was an astonishing and pleasing fact, which gave the crew a feeling of absolute security in this situation.

In my opinion this fact, besides the many other known advantages of the Voith-Schneider propulsion (engine rotating in one direction only, highest manoeuvrability, shortest stopping distance and as result, greatest security) suggests for further examination the use of this form of propulsion.

# A BED OF ROSES IN PORTSMOUTH NAVAL BASE



by MCM2 Squadron Staff.

Pictures by SMOPS Photographic Section.

With the rundown of alongside facilities at HMS VERNON in the early 1980's and to improve support for TON and HUNT Class MCMV's in Portsmouth, Number 2 Basin at the South East end of the Naval Base was earmarked as a site for extensive development.

Phase 1, which provided facilities principally for TON Class vessels, was substantially completed during 1984 and the Second Mine Countermeasures Squadron, with its distinctive Hampshire Rose funnel badge was the major beneficiary.

Phase 2, which is currently underway with a planned completion date of December 1990, represents a major additional development which will permit a squadron of HUNT Class MCMV's to operate with full shore support from Portsmouth Naval Base.



● The view looking northwards across 2 Basin. At left is HMS HUMBER, a River Class MSF of MCM10, in the background are three Ton Class MHC's of MCM 3 and an Oberon Class submarine is docked down in Number 11 Dock at right.



● View of the south-east corner of Number 2 Basin, with a Ton Class Minehunter refitting in Number 8 Dock and contractors working on the jetty improvements. In the foreground, atop the lamp-post, is one of the new transit beacons to aid safe entry through the narrow entrance to the Basin.

When complete, the project will provide shore-based facilities for the servicing of MCM vessels alongside, utilising refurbished, existing buildings adjacent to 2 Basin, which has itself undergone a major transformation involving wall-strengthening works to permit berthing operations throughout all tidal stages. The updating of domestic facilities for vessels alongside, such as firemain, shore power and telephones is also being addressed.

Continued overleaf

# Main Feature (continued)

*Continued from previous page*

To support the ships administratively and materially, offices and store rooms will be co-located with new workshops and maintenance areas in the old sail loft to the west of 2 Basin, with two dry docks to the east. The pay and stores offices are already in being, assisting the Craft Support Unit (CSU) and those units of 3 MCM (The TON Squadron) currently operating from Portsmouth. The whole package is designed to cater not only for the Royal Navy's modern fleet of Mine Hunters but also those of our NATO allies, well into the 21st century.



● *HMS BICESTER, a Hunt Class MHSC (albeit a "Blackfoot" version from the Rosyth-based 4th MCM Squadron) gently enters into Number 2 Basin to trial the new leading lights.*

To prepare for the change of emphasis from TON to HUNT Class within Portsmouth Naval Base, the remaining TONS of 2 MCM transferred squadrons to 3 MCM but remain Portsmouth-based. 2 MCM then became a HUNT Squadron, consisting of HM Ships BRECON, CATTISTOCK and HURWORTH.

Due to the absence of adequate facilities in Portsmouth and as a temporary expedient, the re-juvenated 2 MCM, together with the Squadron staff of the Commander MCM2, formed up at Rosyth and

have since been crewed by largely Scottish-preference ratings.

Returning from a busy Mediterranean deployment in June 1989, the 2nd MCM Squadron was enlarged by the addition of HM Ships ATHERSTONE and COTTESMORE and together, the five ships of the completed Squadron will be based at Portsmouth from January 1991, crewed (fingers crossed) by Portsmouth preferencees. To pave the way for the "return" of the Squadron to Portsmouth and to help consolidate facilities in the new complex, the Staff of MCM 2 moved into their offices at 2 Basin on the 1st March 1990. Led by Commander J C Scoles Royal Navy, the Squadron has a busy period ahead prior to January 1991. Exercises, weapon training, work-ups and a then an on-call period for Gulf deployment are all programmed for the latter half of 1990, to be followed by leave in Rosyth and finally the transfer south.

The Hampshire Rose's return to Portsmouth as the emblem of 2 MCM is long overdue and hopefully will remain there for many years to come.



● *Commander Scoles and his Squadron Staff on their return to their new Hampshire Home.*

## The History of The Hampshire Rose



The Hampshire County Badge consists of one red rose surmounted by a golden crown, with a little cone-shaped red cap above the crown all surrounded by a wreath of green leaves. The motto "Com Southton" is an abbreviation for "County of Southampton" which was the County's official name until 1959. When the badge was first adopted there were no colours but, when coloured versions were called for, the rose was portrayed in red.

The rose is generally thought to be the Red Rose of Lancaster, granted to the Hampshire Militia by either John of Gaunt who was Duke of Lancaster, or by King Henry V when the militia went with him to France and fought at Agincourt in 1415. In 1895, when the County Council was deciding what to do about a Coat of Arms, the College of Arms were consulted. The College did not know the County's authority for the use of the Red Rose of Lancaster. The Lancastrian connection is interesting: The red rose was in use consistently as a Lancastrian emblem, and Edmund, Earl of Lancaster, the brother of Edward I, had red roses emblazoned on his tomb in Westminster Abbey. The Hampshire Rose is widely used on local Coats of Arms: Southampton has three as have the Arms of William of Wykeham. The Priory of Southwick had two white roses in its Arms and Petersfield has a red rose. The badge is Hampshire's own, and only the County Council may give or refuse permission for its use, but the Badge may not be displayed on a shield if the rules of heraldry are not observed.

# PROFILE OF A PART-TIME MUPPET

by P F SYMES

**It has been pleasing to see the RNR mentioned, albeit briefly, in "Minewarfare And Diving" magazine. I wish to give an insight into the MW Branch within the RNR which means with its limited Ops sub branches a considerable amount of re-cattng for ex-RN personnel, in the hope that the professionals will perhaps treat us as almost human.....**

As you will probably be aware, the RNR forms the 10th MCM Squadron, which is numerically the largest Squadron in the Royal Navy..... unless you know better of course. Many of us are ex-RN and in my own case, a former gunnery rate, (QR2). Having left the RN in 1973 my only contact with the Andrew was the annual signing of my "still alive" form for my RFR retainer.

In 1976 the national press covered a tragic accident in the North Sea when HMS Mermaid collided with, and subsequently capsized HMS Fittleton on completion of a RAS. Twelve men from the Fittleton were lost.

A subsequent newspaper report by a journalist who used to belong to the Parent RNR unit of the Fittleton (Sussex Division) gave an account of the probable scenario onboard the RNR vessel prior to the disaster. On reading this, the urge to renew my old lifestyle got the better of me, and having ascertained that Mersey Division in Liverpool was my nearest unit I set about joining.

My expectations of a Nissen hut and a set of elderly Wavy Navy types were quickly dispelled on my first visit having seen the set-up and the fact that there were so many Permanent Staff, (I'd never heard of the draft!) I immediately began calculating how many year's taxable pay it was costing me!

The vetting procedure - even for ex-RN's - took some 4 months, and it was February 1977 before I was accepted. Within 3 days I found myself as the Buffer of HMS Crichton for a sea weekend. Fortunately it was to be a non-sweeping weekend, so I only felt marginally insecure, given the fact that my only time previously spent on a Ton was during an intense D.T.S. in Hong Kong (and to this day I don't remember getting off the ship!).

A short time after having joined the RNR, a

new permanent Staff TASI (pre-MW days) joined HMS EAGLET, by the name of Neil Rutherford. Most of the current senior rate ME's at EAGLET have cause to thank Neil, as he was genuinely interested in his work and spent many patient hours cross training ex RN's & FC's as well as UC's & UW's (who we gunnery rates felt had an unfair advantage, as they knew their way around VERNON.....).

We sweated blood as "mature students" alongside RNR new entries with "no previous experience", trying to take in the complexities of CTA, Loop, Acoustic Hammers/Displacers, etc as well as O's and Double O's and all in 4 hours per week in the classroom and practical work on sea weekends!

Eventually we had mastered the Ton Class Sweeper (having had three by 1982, we even beat the RN on occasions: you just cannot imagine the satisfaction that brings.....). Just as we were beating our chests in triumph, we were informed that we were exchanging CROFTON for BRERETON. So, it was back to the drawing board and the capable hands of Tony Sheaf at VERNON to learn all about 193 sonar, Short Scope Buoys, and the joys of being an MHD.

We had BRERETON for 3 years and eventually swapped the "Gloom Room" for a sweep deck again with the arrival of the MSF. Although probably not so challenging in pure seamanship terms as the Tons, it does have its advantages: the accomodation is first class, and there is even room forward of the winch for top class floodlit deck hockey, and the lack of an anchor bed does wonders for wax in the ears.....

During the last couple of years some of us CPO (MW)'s wanting to give the up and coming PO(MW)'s some space, have opted for MCMTA work (another of our war roles) with MCM 10, MCM 4 (Hi Dixie!) and, more recently, with MCM 3.

The message we're trying to get over is, since the formation of the 10th Squadron in the mid-70's, the professional learning curve of the RNR has been constantly on the rise, but, to be fair, it can only be maintained if permanent staff of all branches, are in the draft for the job not the geography. That holds true for Squadron Staff also, though we are confident that "Barny" Barnet B.E.M. will be a worthy

successor to Jumper Collins who we will miss greatly for his genuine help, humour, and fluorescent shorts!

While on the subject of BZ's, one person who has provided the greatest input, concern and stimulation into RNR training since the formation of the 10th Squadron has been Cdr G Bartlett (MCM10) who has the knack of discharging his professional duties in a manner that makes everyone from the C.O. to the most ordinary of Seamen feel that their input has a purpose, and it is clear that that is greatly appreciated. Best wishes to him in his forthcoming future appointment.

In conclusion, our grateful thanks to our supporters, and to our critics: we hope you understand us a little better now, and can perhaps be patient with us.



## WOMENS' ROYAL NAVAL RESERVE (P.D.)?

by Jane Alexander

The introduction of female divers into the Port Diving Branch of the Royal Naval Reserve has resulted in four females now being qualified to dive to 30m. Although this is a relatively small number (and may always be), in comparison to the overall strength of the Port Diving Branch, it can be viewed as a major step forward in terms of integration, concomitant with what is taking place in many other areas of the Navy.

It is also an axiom that perhaps the only limitation that will restrict female divers is a physical one. However their role technically and as a member of the dive team runs parallel to that of their male counterpart.

The American and Australian Navys have been successfully employing female divers for years. They have proved that it is a feasible proposition. Let us hope that more females take an interest in the Diving Branch, in the future and boost the existing numbers.

# Army Diving

## Inter-Service Co-Operation I

by Steve Gadd

Just before Christmas of last year, I received a call from the Royal Navy Headquarters in Moscow Camp, Belfast, requesting the assistance of the diving team of 33 (Independent) Field Squadron, Royal Engineers. The task was to inspect the hull of HMS CYGNET, one of the Northern Ireland Squadron patrol vessels, and to confirm whether or not that they had lost a rudder from their ship.

The diving team deployed from Antrim, and, following a quick inspection dive by LCpl Wotherspoon, it was confirmed that the rudder was indeed missing. This meant that the ship was unable to complete its patrol programme, therefore the replacement of the rudder was a high priority task to enable the ship to be classed as seaworthy again.

After much consultation, it was decided to change the rudder whilst the ship was still in the water. It is believed that it had been done once before 'somewhere'.

Harland & Wolf Shipbuilders of Belfast were commissioned to produce a new rudder which was conveniently completed on a Saturday morning (when they were on time and a half). The diving team arrived early on the Saturday morning and set up their diving equipment whilst the crew were preparing to undo the broken shaft. Meanwhile, it was noticed that the key way of the new rudder shaft had been cut 90 degrees out of line, meaning that if we had fitted the rudder it would have lain port to starboard instead of bow to stern.

This caused the job to be delayed for a further 24 hours whilst Harland & Wolf took the rudder away again and overnight re-cut the key ways. Sunday morning arrived and once again the diving kit was set up on Moscow Jetty, Belfast. It was decided that we would use the Divers Underwater Communications System (DUCS), to enable the diver to

speak to the surface team, whilst the crane lowered the rudder into the water. This worked very well and it proved to be very helpful.

When this had been done, LCpl Steve Andrews was sent down and attached a chain which was then lowered down the rudder shaft fixing it to the new rudder. Finally with a lot of taking in and paying out on the chains, the new rudder was eventually put in place the correct way round. This was a very successful diving task which was completed in a couple of hours once the initial problems had been resolved.

Our reward was a bottle of Captain Morgan's for saving the Royal Navy a considerable sum of money.



## Inter-Service Co-Operation II or: "WH

It appeared to be a normal Sunday morning as I went to the NAAFI to pick up my newspapers and, in company with a chum from Boat Section, headed for the diving store to finish some uncompleted work. On our way, we passed by the boats. At first glance, they seemed OK, but a second look was necessary as we both focussed on a radar, protruding from below the surface.

The immediate conclusions were: (a) that an underwater terrorist vessel was monitoring activity in Massarrene Barracks from close quarters, or (b) that the Navy's "Spearfish" patrol boat was sitting on the bottom. We decided that the latter of these

was more likely because, firstly, there was a Spearfish patrol boat missing, and, secondly, the radar was not turning. On closer observation, we were proved correct.

After pulling ourselves up from the floor, we decided that we had better tell somebody, and so we telephoned the Navy representatives, who appeared on the scene in seconds, as did half of 33 Independent Field Squadron: excellent entertainment for an otherwise ordinary Sunday morning!

We decided that we needed some buoyancy bags to recover the Spearfish. As we do not hold these in our store, we had to try outside agencies. Sgt Jim Leach tried everywhere, but nobody had any. The Royal Navy's



# Practice Plunge In Hamburg

by Barry Le Grys

21 Engineer Regiment, based in Nienburg/Weser on the North West German Plain, is established for a 12man diving team. The team's role is to support the Regiment on combat engineer tasks in 1st Armoured Division.

The team deployed with the Regiment for a four week long exercise in March and carried out river reconnaissance for bridging operations, recovery tasks on equipment lost during prior bridging and bridge demolition tasks, as well as safety cover and recovery on amphibious engineer vehicle crossings.

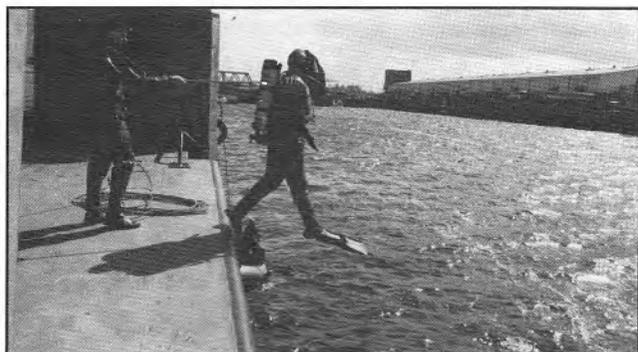
A Spring diving concentration was planned for April to supplement the exercise activity and, after a month in the field, Staff Sergeant Price suggested there could be nowhere better than Hamburg.

The team drove to Hamburg and stayed for five days where we were accommodated in a German barracks within 30 minutes drive of the docks.

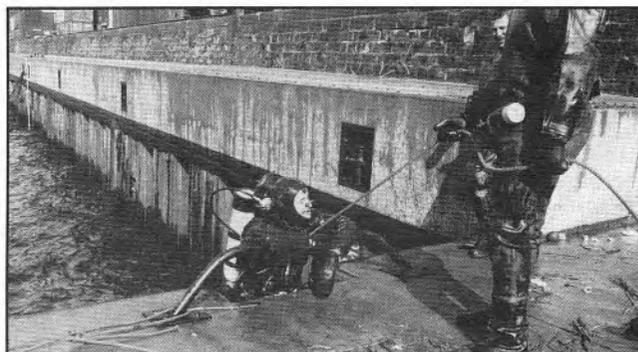
Several tasks were carried out including a day with the German civil police diving team. Two days were spent working in the docks inspecting piles and berth walls for damage and maintenance requirements. This was not straightforward. A high entry was required and the water was pitch black. The task was done and the inspection report presented to the harbour authorities.

The harbour authorities were sufficiently impressed by our thorough and flexible approach (we were able to work within their busy docking timetable) to have the local press run an article with photographs. This resulted in some good publicity for the Army.

The team has been invited back to the docks for more intensive tasks (including the clearance of underwater hazards) and is pleased to have found an underwater work site which is dark but rich in training value and potential.



● Staff Sgt Cross on a high but easy entry



● Cpl O'Brien on a high but difficult exit

## DO WE NEEDS BUOYANCY BAGS?"

by S Hewings

Clearance Diving Unit in Rosyth were prepared to fly over but were stopped from doing so.

Engineers being Engineers, it was decided by our Diving Officer, Lt Jim Walker, and our Diving Supervisor, that we could do the job using oil drums. It was only necessary to seal the bow of the boat, and to lift the stern high enough to drop the water level below the gunwhale.

One diver managed to work a line under the stern of the boat and between the prop shafts. A barrel was connected, upside down, to each end of this line, and, using an extended air line from nearby Workshops, these were each filled with air. Each oil drum would have a 1/4 of a ton lifting ability, and it was calculated that the sunken vessel would weigh approximately

8 tonnes. We carried out the same procedure four times before she finally rose high enough for us to begin pumping.

Up came the Spearfish, in went the submersible pumps, and down went the water level. Once all three pumps were working, the boat began to rise quickly, and it was not long before she was floating again. The original reason for her sinking was not apparent, but that was not surprising as the Spearfish have a habit of sinking when they feel like it!

Once floating, we used a CSB to manoeuvre the boat onto its trailer..... All part of another day's work in 33 Indep Fd Sqd Diving Team!



# Standard Operator Checks

## Naval Staff Authorship Vs. Standard Operator Checks

by John Nundy

**"Standard Operator Checks (SOC's) are designed to be carried out on a regular basis to prove equipment availability and reveal any basic defects. They will enable the Command to assess, with confidence, weapon system effectiveness and the fighting efficiency of the ship."**

This introduction is taken from Chapter 1 of every SOC BR and having very recently taken over the job of writing Standard Operator Checks for ships of the Royal Navy, I felt that there was need to let the world know that this very important fellow exists to make your operational world more enjoyable and FUN! My task does not just encompass the more important and bigger grey funnel line steamers but involves the 'little ships'. I wonder how many of you out there realise that there is a MoD Civil Servant (Grey Demob suit, clutch of pencils etc) beavering away in a dark office writing SOC's? Well fear not any more dear reader, there is, and I am the fount of all SOC's knowledge.

This article is therefore not only written in response to the request for contributions from the Editor of the "Minewarfare and Diving" Magazine, but to get across to MY readership that I am here to serve you and that I need your inputs updating your SOC's.

However, before I get down to telling you what SOC's is all about, I'll tell you who and what I am. After a long and very eventful service career, I retired from the RN as a Lieutenant SD (g), MBE at the end of December 1989. My last job in RN Service was as the Ratings Training Officer (Missile) at HMS DRYAD and where I obtained the post of Naval Staff Author via a very competitive Civil Service recruitment. (No "Jobs- For-The-Boys" routine here!).

My service in the RN included some lengthy spells at Whale Island, Chatham Naval Base, other far flung outposts of the Empire and 10 months (1969-70) in ABDIEL based at Port Edgar (where I learned a bit about Minesweeping and Minelaying).

I am now a Civil Servant (grade HPTO), working for the Directorate of Naval Warfare as a Naval Staff Author. The Naval Staff Author Section is currently based in Oliver Block, HMS DRYAD; however I reside as a 'lodger' within the CNOCS organisation at ARE Portsdown. My job as a Naval Staff Author is to "Write" Standard Operator Checks for all classes of surface Warship. This enormous task means that I am obliged to put pen to paper and actually write (this phrase is somewhat

of a misnomer: in reality I have Wordperfect 5.1 and a Phillips computer to help, but the real work in terms of thinking is done by me not 'Phill'). Now this is where you, the sharp end operatives, enter on to the scene and where us chaps can have some real FUN! I hereby invite you to put your Nos 1's Thinkex caps on and thus write, compile, list, draft and produce changes and amendment to the Standard Operator Checks for the equipment fitted in your ship; and which will then be translated (by me) into MoD-speak worthy of inclusion in your BR. If you do this, going through your WEO, MWO, PWO, CO, SWEO, SOO and Admin Authority in the process, you will receive a BZ from me.

I have 29 Books of Reference in my library specifically devoted to SOC's. The BR's which are applicable to MCMV's and the assortment of other little ships looked after by The Commodore Minor War Vessels are:

BR	8513 (2C3)	HUNT class MHSC	*
BR	8734	TON class MHC	
BR	8220	TON class MSC	
BR	8261 (2C3)	RIVER class MSF	*
BR	8413 (2C3)	SANDOWN class MHC	*
BR	8735	ISLAND class OPV	*
BR	8232	CASTLE class OPV	*
BR	8288	PEACOCK class HKPV	
BR	8184 (2C)	CHALLENGER	*

It is my intention to revise, produce changes and a new formatted BR, in A5 size, for the BR's starred (\*) above. If you have any changes or amendments for the SOC's in your ship please forward them to your Administrative Authority, copy to:

Ministry of Defence (Navy)  
 Directorate of Naval Warfare  
 Naval Staff Author Section  
 HMS DRYAD  
 Southwick  
 Fareham  
 Hants  
 PO17 6ES

FA0 NSA - GT5 (John Nundy MBE)



## In The Doghouse



- Pictured at left is a pair of pets, presumably ship's pets, taking a siesta, in the shade, on the quarterdeck of some steel-hulled vessel, somewhere, sometime..... Badger Ottley passed this photo to the Editor for publication, saying, with a wry grin, that there was a good dit or two behind the otherwise passive scene depicted. Responses, especially those with dits along the lines of "I learned about Minewarfare/Diving from that!" would be warmly welcomed.

## R.M.A.S. DIVING EXPLAINED

by John Gandy

**The Director of Marine Services (Naval) has a Fleet Support commitment that, amongst many other tasks, involves diving. This article outlines the past development of Salvage Diving and explains the present-day roles and responsibilities of Royal Maritime Auxiliary Service (R.M.A.S.) Diving.**

Diving within the Fleet Support area goes back many years to the days of Admiralty Salvage, but even before this, divers were used within Naval Dockyards, around the world, to dock down Naval Ships and provide diving support for the Dockyards. Today this task is undertaken by FMRO divers in Portsmouth, the only remaining Naval Dockyard.

At the end of the Second World War, the Admiralty formed its own dedicated Salvage Section and all men serving in this section signed modified Articles of Agreement (D606). The Coastal Salvage vessels and Bar Class Boom Defence ships were manned by either RN or civilian crews and each ship carried two divers. In the civilian ships these were mainly Shipwright Divers, whilst the RN divers were Boom Defence Ratings (Diver) 3 or 2, ie: AB or LS level.



● *The R.M.A.S. SALMASTER - A modern example of a Mooring and Salvage vessel.*

The early 60's saw the formation of the RN Clearance Diving Branch which ended the use of Standard Diving Equipment (SDE) by Naval divers, although the equipment was retained by the civilian section and remained in use until December 1988. It was not withdrawn for safety reasons, but simply because the material used to make spares was becoming increasingly difficult to obtain.

The creation of the R.M.A.S. in 1975 from the Port Auxiliary Service (PAS) and D606, provided some 47 divers who worked from Salvage and Mooring Vessels. In 1976 these teams of divers were removed from the vessels, and formed into units operating from ashore. There they prepared themselves for the advent of the Health and Safety Executive (H.S.E.) Diving Regulations

Today, DMS(N) operates 7 shore based teams: At Rosyth there is a H.S.E. Training School, which trains student divers to Part 1 Standard. This school was used as the model by The Manpower Services Commission in 1977 when the training schools were being formed.

DMS(N) is the Mooring and Salvage authority within the MOD and is responsible for the recovery of crashed military aircraft plus the salvage and first aid repair of warships.

Diving equipment is provided via the same route as naval equipment but DMS(N) does not have any military exemption from the H&S Act and is thus constrained to use HSE-approved equipment.



● *AH3 diving equipment has replaced the SDE.*

An Atmospheric Diving System (JIM), with the capability to operate down to 1500 feet, is operated by DMS(N) divers who recently recovered items required by the Accident Investigation Board from the TORNADO featured in MAD Volume 1 Number 1.



● *JIM 22 being swung out prior to deployment. The diver remains at Atmospheric Pressure (1 Bar) throughout the dive.*

Divers are drawn from all departments of the R.M.A.S. and following a H&S approved medical are qualified to H&S part 1 standard. This is followed by training in the skills needed for salvage and mooring work ie cutting/welding, air-lifting, HP/LP waterjetting, detailed wreck survey and preparation of shaped patches.



# Clearance Operation

## THE DREDGING OF THE MEDWAY

by Russell Tatt

Towards the end of 1989 the Portsmouth Area Clearance Diving Unit (PACDU) were informed by the Medway Ports Authority and 33 Royal Engineer Regiment at Chattenden of the commencement of dredging operations in the Medway approach channel near Sheerness.

This would involve removing some 3.4 million cubic metres of gravel, sand and silt from the channel and pumping it ashore along a large pipeline on to the Lappel Bank Reclamation Site.



● *The dredger "Alpha B" in the Medway Approach*

The only fly in the ointment of this project was that the dredging operation would take them into close proximity of the wreck of the Richard Montgomery.

This caused two major concerns: firstly, that ordnance may get sucked up and stuck in the grills of the dragheads of the dredgers; and secondly, that if it got past the grills, along the pipeline and past the pump room, it would be pumped ashore on to the reclamation site.

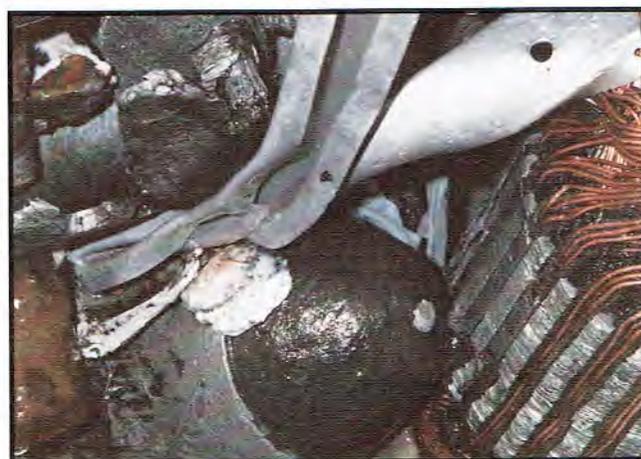
A timely response to any EOD callout on the dredger was of paramount importance: standing charges for a dredger the size of those working in the Medway approach are £1200 per hour.



● *The Draghead of the Dredger "GEOPOTES 15"*



● *AB (D) "Jumper" Collins of PACDU with various items of ordnance recovered from the draghead of the Dredger "ALPHA B"*

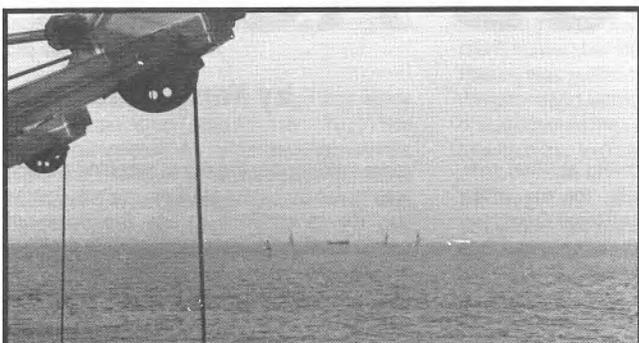


● *"Scallop Shells and Anti-Personnel Lead-swathed Shells, Alive, Alive-Oh"*

It was decided after long negotiations with 39 EOD Regiment and UKLF that the ordnance on the dredger was a Royal Navy responsibility and any ordnance found on the reclamation site was an Army responsibility.

It was also decided that as 39 EOD Regiment was geographically best sited, they would have the responsibility of disposing of all the Explosive Ordnance and to take overall command of the operation.

Hence began a four month operation involving all four clearance diving units and 39 EOD Regiment.



● As dredging continues in the "GEOPOTES 15", the infamous wreck of the "RICHARD MONTGOMERY" is visible in the background, with its masts protruding above the surface.

The Navy had to supply a supervisor plus one, 24 hours a day, to stay on the dredger to remove any ordnance caught in the drag heads and to pass it onto the army for disposal.

As the operation got underway it became apparent that the dredgers were discovering a totally different type of ordnance than was first anticipated.

Instead of Second World War munitions from the wreck of the Richard Montgomery, they were finding mostly cannon balls and pre 1900 shells. Although most of the items were not fused and posed little threat to ship or crew, they still had to be removed and dealt with.

Only with the help and co-operation of all four Clearance Diving Units (including the staff of DEODS) was the timely and successful completion of this project achieved. A summary of items dealt with by the Units is as listed in the table at right.



SERIAL	ITEM	QTY	RMKS
ONE	6 Inch / 40 Pdr Large Shells	285	18 /19th Century
TWO	Small Shells	138	Up to WW I
THREE	Small Arms Ammo (Up To 20mm Cannon)	89	Includes Fired Bullets
FOUR	Shell Cases & Parts of Rounds	114	Misc. Origins & Ages
FIVE	Unusual Items of Ordnance	1	Depth Charge
		1	50lb Torpedo Warhead

● All items listed above were recovered from the Dredgers "GEOPETES 15", "ALPHA B", and "VOLVOX DELTA", between 25 November 1989 and 11 March 1990.



● Various items of ordnance, of differing age, condition and hazard, recovered from the draghead of the dredgers "VOLVOX DELTA" and "GEOPETES 15"

## Historical

# UBIQUUE - SUB AQUA

by Tony Wareham

### AN HISTORICAL REVIEW OF THE ORIGINS OF SERVICE DIVING.

#### First Dive , Aged 58

We shall never know what was in the mind of that one-armed Colonel of the Royal Engineers as the murky waters of the Medway closed over his head on 28 April 1838. Certainly there could have been no fear. A veteran of the Peninsular Campaign and having been severely wounded by shot and bayonet at the Siege of Walcheren, he had had his share of hand to hand fighting. Possibly there was some puzzlement as to why he, the Director of the Royal Engineers Establishment, was risking his life at the tender age of 58. But, being of a highly inventive disposition, he was probably congratulating himself that the honour of being the first Service diver in the world had fallen to him. Possibly even, this scholarly senior officer with the schoolboyish sense of humour was amused that he, Colonel Charles Pasley, was turning the Regimental motto of "UBIQUUE" ("Everywhere") to "SUB AQUA" ("Underwater").

Certainly he must have known the risks involved, as Mr Deane's Common Diving Apparatus was still relatively unproven, although John Deane and his brother Charles had been diving on the Royal George since July 1832.

John lived some twenty miles from Chatham, and it is suggested that he and his brother first became involved with underwater diving through a combination of Charles' caulking firm in Deptford and as the result of a fire on the family farm in 1830. After early attempts to pump water from a pond onto the fire had proved ineffective, John Deane reputedly removed the helmet from a suit of armour standing in the Hall, secured the pipe to the inside, and, instructing the labourers to pump slowly, placed the helmet on his head and walked into the stable through the dense smoke to rescue the horses. Soon after, in 1832, Charles patented an "Apparatus to be worn by persons entering a room filled with smoke or other vapour for the purpose of extinguishing fire or extricating persons or property therein"<sup>1</sup>

John Deane adapted the helmet for use underwater and, after an early mishap when the air in his helmet upended him, he added lead soles to his boots. He was then able to join the "sweepers", salvaging the many anchors and cables that littered the shallow seabed of the Thames Estuary.

So confident were they of the "Common Diving

Apparatus" and of their diving abilities, they tendered to the Admiralty for the major underwater salvage of the Royal George at Portsmouth. This unfortunate vessel had been the victim of early cuts in defence expenditure, and although declared unseaworthy, the thirty-six year old three-decker had been commissioned to join the fleet attending the Siege of Gibraltar. However, before she could sail from Portsmouth, her rotten timbers collapsed as she was being heeled over for a minor underwater repair, and she sank at her anchorage, joining two other naval wrecks there, and seriously blocking the harbour entrance.

It was two other wrecks, those of the collier William and the schooner Glenmorgan lying off Tilbury, and making navigation of the Thames extremely hazardous, that caused the Royal Engineers to become involved with diving and underwater demolitions, leading later and inevitably to the formation of the "Royal Engineers Submarine Mining Service."

The Corps had been responsible already for a number of shallow water demolitions as a result of Colonel Pasley developing an effective water-proof fuse for initiating charges underwater in 1825. His method

*"...the logistics of positioning and operating a bell were daunting..."*

was to seal the charges in metal containers which were then contained in timber casks. The initiation was fraught with difficulties: it required the gunpowder train to be fed through 1.5 inch diameter lead tubes which could be up to thirty feet in length. This, coupled with the immense difficulties in locating and fixing the charges in any appreciable current, caused Pasley to change from using a number of small charges, to concentrating on a few, larger charges.

In his first attempts to remove the brig William in the late Autumn of 1837, Colonel Pasley employed the traditional salvage techniques used by the Master Attendant of the Dockyard at Chatham, but to little purpose. Along with a very obvious need for improved and reliable underwater demolition practice, clearly some

more satisfactory means of reaching the site was required. For the 1838 operations, Pasley decided to continue to use the Dockyard diving bell for taking the charges to the site, but to use divers for placing them. He appreciated that the logistics of operating and positioning a bell were daunting, for nearly sixty seamen and four lighters would have to be employed in mooring and moving the bell, whose bulk proved unmanageable in currents approaching one knot. By employing divers for taking the charges from the bell to the site, he hoped to reduce considerably the lengthy and manpower-heavy operations in fine-positioning the bell. This was a bold idea, a logical one, but also an idea closely related to the urge to use the new technology that was developing in Victorian Britain. Nowhere was this more so than off Spithead, where the feats of the salvage divers working on the Royal George had caught the nation's interest. In 1835 there had been a frenzy of diving activity, and two forms of diving dress had been patented by "gentlemen divers" called Fraser and Bethel. Other pioneering divers were borrowing ideas and developing their own equipments, but the Deanes were pre-eminent in experience and the proven safety of their equipment, so it was to them that Pasley turned.

The Deanes, however, were much in demand around the country, and so although Pasley noted that "they urgently requested to be employed", he could not get them to name their terms! Open-ended contracts were, even then, frowned upon by the Board of Ordnance, so he decided that the Corps would have to do its own diving. Therefore, in February 1838, whilst new demolition techniques were being tried and tested in the Medway, demonstrations were given of various diving equipments, and that produced by Mr Kemp was selected.

By April, Colonel Pasley and his volunteers had completed their dry training and familiarisation with the equipment, helped no doubt by the excellent Diving Manual that the Deanes had published. The trainee divers would have noted from it that not only should "the diver dress in two pairs of stockings, two drawers, and two Guernsey frocks, with a handkerchief tied around the neck to keep the frocks well up", but more importantly that "No person should on any account whatever, be suffered to descend in the diving Apparatus, or to attend the signals, unless they are perfectly sober, calm and collected". The signals that the Deanes had devised to communicate with their divers by a hand line, are remarkably similar to those still used today, "One Pull" being used by both

signalman and diver to indicate that all was well, and a constant jerking of the line indicating that the diver was to be brought to the surface at once.

So, Pasley decided that the Corps was ready to make that "small step for man", but in this case, underwater. As a man who had always led from the front in battle, and was now pioneering this new discipline of diving, who had a better right than he to be the first underwater? But whilst rank has its benefits, few of the Sappers on site would have wanted to change places with Pasley and risk their own lives on this unnatural venture into the murky waters of the Medway. On returning to the surface, the Colonel remarked that the equipment had been "comfortable". He then gave the helmet to Sgt Young who was already, dressed for diving, and who then became the second serviceman to dive. By 5 May, and possibly in strict seniority, Cpl Mitchell was given his first dive, and fixed two eyebolts in a baulk of timber placed on the river bed. Colonel Pasley recording at the time that Cpl Mitchell, "had never used a diving helmet before, and yet he remained under water for three quarters of an hour, which has satisfied me that there is neither difficulty nor danger in the use of this apparatus, which I also know by my own experience, having gone down first myself, which I thought was the best way of forming an opinion of the practicability of the proposed operation".

All was now ready to begin the demolition and removal of the brig William and the collier Glenmorgan. The Port Admiral had been instructed to send some naval riggers to assist in the bell operations, and the Water Bailiff of the Port of London arranged for the steamer Swiftsure to be in attendance, and to fly and fire the necessary warning signals when the river had to be closed to ships whilst the demolitions were being fired. Operations started badly when, on 21 May, the now possibly over-confident Cpl Mitchell had overstayed his dive time on his second dive of the day. His attendant had become increasingly worried that Mitchell had not been responding to his signals and reported this to Capt Yule who was supervising the diving operation. One last "pull" was given, but by the lack of any response, the worst was assumed. Col Pasley personally took over the rescue attempt, risking his life in the diving bell which became increasingly unmanageable as the tide had started to run. The bell dive had to be aborted, and on the next attempt at slack water, they found that Cpl Mitchell had become entangled and suspended in the collapsed rigging of the William, and, being unable to cut himself free, had drowned.

Within the week the first of the two 2,500 lbs powder charges that Pasley had prepared had been laid on the brig William, but it was to be fired by an improved fuse consisting of a linen tape filled with gunpowder, enclosed

within a lead tube. This tube was extremely difficult both to join to the charge and to support through the water. The fuse was the most vulnerable point of the operation, but Pasley was sufficiently confident to publicise the proposed demolition day, and many city officials joined the vast crowds who had come to watch the explosion.

"A beautiful explosion" wrote Pasley afterwards, for parts of the brig's timbers and rigging had been carried upwards in the column of water from the blast. To have got it right first time was an achievement, but the really satisfying part was when a check next day from the diving bell showed that the William had "ceased to be an obstruction", and that the channel depth had been increased to 5 fathoms clear of any debris.

A confident Pasley now attacked the Glenmorgan with his second charge, and this too was successful, exceeding his wildest hopes. The Thames was now clear of obstructions, and a grateful Lord Mayor presented Pasley with the Freedom of the City



"...a beautiful explosion...."



and a Gold Medal. In spite of his success, the problems of the underwater fuses continued to concern Pasley. He knew he had been lucky on these two very public occasions, but their innate unreliability and difficulty of handling, made him turn to a relatively new invention then interesting the scientists and inventors: electricity.

Over at Portsmouth, the Deanes were continuing their salvage operations on the Royal George, but during 1834-36 they had removed most of the salvageable, but essentially sellable, material and guns. Now they were slowing down the work as the remaining salvage was deep within the wreck and could only be reached using demolitions. In early 1839 Pasley was considering a much larger, and altogether a more daunting project - the clearance of the Royal George. Success on so grand a scale and on such a public site, would confirm the R.E. Establishment as being in the forefront of Victorian technology. He had not wanted to be rushed in planning this project, but the active interest being shown by the Deanes in wanting to use his electrical initiation, prompted Pasley into taking rapid action. In March he lodged a letter of intent with the Board of Ordnance, asking that he be allowed to approach the Admiralty directly with a view to "forming a plan of operations, and computing the cost of its destruction by blowing the woodwork to pieces, and weighing the guns and waterlogged oak timber".

By 25 May he had completed a carefully considered and calculated plan, based upon his experiences in the Thames' Operations the previous year. He estimated that he could "carry out the clearance within two working seasons, using RE and civilian divers, a diving bell manned by the Navy, and a working party of about twenty NCOs and Sappers. The whole would not exceed £2,500; and if operations begin in the current year (1839), then there can scarcely be a doubt of the Anchorage at Spithead being put into a fit state for a British Fleet, in the course of the Year 1840".

These were brave words, far braver than Pasley could then realise, as they were based on the relatively little experience he had gained on the William and the Glenmorgan. Surface engineering can be readily quantified, with the only variables being weather and luck, but even to this day we fail to appreciate the unforeseen and unknown problems of operating underwater. Even the recovery of the Mary Rose with all modern diving and recovery techniques available to the planners and diving teams, still managed a five months slippage on a five month recovery task, and was close to becoming a very public and humiliating disaster.

By July, Pasley had been given the approval that he needed. Within the month he had a fleet of three Dockyard lighters moored on site and his divers and work force were quartered on board the hulk Success. Capt Williams RE was in charge, but inevitably Pasley spent much time on the site.

The great good luck that had shone on Col Pasley's underwater endeavours at last deserted him, temporarily but humiliatingly. On lowering the first of the two 2,500 lbs charges to the wreck, the first became caught up in some obstruction and had to be recovered to the surface. The second was successfully placed by the divers, the fuses prepared, the warning flags flown and the bugles sounded, the electrical contacts made - and nothing. A complete nothing that was being watched by Royalty and many distinguished personages. As a result of this, Pasley sacked his chief civilian diver, dispensed with the naval diving bell and restrengthened the charge casings which had leaked at the depth of 96 feet.

A delay of three weeks followed whilst these problems were resolved. But on 17 September, Pasley felt confident enough in the improvements that he had made to try electrical initiation again. With an eye to his future, or perhaps as a let-out should there be another failure, the Officer in Charge of the Demolition, Lt Symmonds RE, tactfully allowed Pasley's 7 year-old son to "complete the circuit" on a small charge of 260lbs, and this time it worked. Within the week they were able to use the now strengthened 2,500 lbs charges which, whilst proving very effective

*Continued overleaf*

*Continued from previous page*

underwater, became one of the earliest tourist attractions. On firing days, crowds lined the foreshore in front of Henry VIII's Portsea Castle, to watch both the impending spectacle and the inevitable amateur yachtsmen entering the site area and on occasion ramming the workboats.

*"It must be considered one of nature's miracles", wrote Capt. Basil Hart RN in the United Service Journal, "for certainly nothing can be more surprising than the tap of one wire against another, in a boat or vessel, should instantaneously ignite gunpowder and break to pieces the strongest masses of wood and iron at the bottom of the sea, at a great distance from and with perfect safety to the operator".* This last remark was perhaps more optimistic than the gallant Captain, anchored immediately above an underwater charge, ever realised, and remains one of the more interesting experiences of today.

Work resumed on the Royal George in 1840, but Lt Symmonds RE and a small detachment were tasked with the removal of the wreck of the frigate Edgar. A chance spark had rapidly turned to a raging fire which reaching the magazine and the vessel had blown up: She now lay on the Mother Bank off the entrance to Wootton Creek on the Isle of Wight. Pasley, meanwhile, turned his attention to improving the diving equipment. The Royal Engineers had been using two of the Deanes' Common Diving Apparatus since the start of the Royal George operations, although he himself had originally dived in Mr Kemp's dress and used it for the removal of the William and the Glenmorgan in 1838. Recently he had introduced two sets of Siebe's design, which proved very popular with the military and civilian divers. They objected strongly however to Bethell's equipment which took some twenty minutes to undo the twelve cumbersome locking nuts and remove the helmet. The divers were making between three and seven short dives a day, and, as they liked to be able to take off their helmets and breath fresh air on surfacing, they found Bethell's equipment too time wasting.

Augustus Siebe was a remarkable man. A former Austrian Gunner, he had come to this country and was practising as an engineer of some skill and inventiveness. He had already a number of Patents to his credit, from papermaking machinery to hydraulic apparatus, but he was adept at improving other people's ideas. As such, he proved invaluable to the Deane brothers when he collaborated with them and was responsible for major improvements in their air pumps, enabling them to work at far greater depths. It was this facility for improvement coupled with the strong possibility that one of the brothers parted with his rights to their invention, that made the manufacturing firm of Siebe Gorman pre-eminent in diving equipment for a century, and also started the myth that Siebe had "invented" the original diving apparatus.

By December 1840, Pasley was able to complete his Technical Evaluation. In his Report to the Inspector General of Fortifications, W044/613 dated 30 December 1840, he praised the Deane's Apparatus, *"which is simplest of all, though very efficient for common purposes, and highly approved by many of the best divers, (it) does not admit of a man lying down or stooping with his head lower than his body, without a risk of his helmet filling with water, and if he should by accident, or by neglect of his assistants fall over into a hole, or down the side of a wreck head foremost, he will be drowned, if not hauled up immediately"*.

Pasley came down strongly in favour of Siebe's apparatus, which he himself had helped to modify, and he recommended it for "Public Service". It is essentially almost the same design which is in regular use around the world today, due to the simplicity of operation, maintenance and training.

Work on the Royal George continued, slowly but surely, but the original over-confident target date of completion in the season 1840 was long past before the Royal Engineers were able to withdraw. The problems of working underwater off Spithead in mostly nil

***"...his military divers suffered from repeated attacks of 'Acute Rheumatism'...."***

visibility, the complex vagaries of the strong tidal currents, and the effects of pressure on the divers working at depth had not been anticipated or evaluated properly. The cause of the Bends, or "Caisson Disease" (for it was first identified in tunnellers) from working in compressed air, was then unknown. With hindsight it is interesting that Pasley's civilian divers had some gut feeling about the dangers of repetitive dives, and he had to sack them as they showed a marked, and instinctive, reluctance to work the long hours that he expected from his disciplined military divers. These were known to have suffered from repeated attacks of "acute rheumatism", one of the simpler definitions of the early stages of the Bends.

Nor were the incredible effects of seabed scour off Spithead fully understood. The unfortunate Lt Symmonds RE had "destroyed" the wreck of the Edgar in 1840, blowing it into three pieces. But in 1844 a check sweep revealed that whilst the bow and stern had gone, the centre section had now been uncovered from the mud, and stood proudly almost 13 feet high! Lt Barlow RE finally blew it later in 1844 as a conclusion to the Royal Engineer operations off Spithead.

This had been a prolonged affair, which must have become really tedious and repetitive after the initial euphoria of 1840 had worn off. True, there had always been something new to occupy the divers and the support team. Major General Pasley, for he had been promoted on 23 November 1842, persuaded the Navy that the improved diving apparatus and techniques had surpassed any benefits that they had obtained using diving bells in the Dockyards. So, in 1843, he had detached LCpl Jones to instruct thirteen Petty Officers and Seamen from HMS Excellent in the "discipline of diving", which had been included in the R.E. Establishment training since 1839.

He had insisted too that meticulous records were kept of all the artefacts recovered, following the lead of the Deanes in Underwater archaeology. Some of the watercolour drawings by Sapper draughtsmen are now in the Science Museum. His variants of electrical initiation were based on his experiments with land line telegraphs. Under his direction, Capt Hutchinson RE had tried using a single cable with a water return, *"in which", wrote Pasley, "he was very zealous, but to little effect, as the method required a battery of double the power"*.

His attempts to initiate multiple charges underwater proved ineffective and costly, as *"we lost a great deal of powder, as we never succeeded in firing more than two charges simultaneously out of a great number, and the cases containing the second charge were generally burst, and the powder spoiled, by the explosion of the first that happened to prove successful. We therefore in all cases used a voltaic battery and two conducting wires to every charge in our operations against the Edgar in 1844"*.

When you consider the complexities and the enormities of the underwater projects that Col Pasley entered into, mastered and conquered, buoyed only by his own enthusiasm and the Victorian drive for scientific knowledge, then the audaciousness of his enterprise can only be likened to the 20th Century Race in Outer Space. Like that first Astronaut on the Moon who claimed that *"it was but a small step for man"*, Pasley's first dive in the Medway on 28 April 1838 was a physical step which was to change the face of working in Inner Space.

His contribution, through scientific and methodical engineer expertise, confirmed the new discipline of diving that the Deanes had pioneered. His efforts are not largely forgotten and unappreciated, but they formed the firm base for future diving and underwater engineering, from the North Sea Oil operations to the Recovery of the Mary Rose. Perhaps this last, involving so great a contribution by Sapper Divers, in the Solent, would have pleased him most.



# Letters to the Editor



*"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, DAMAGE CONTROL

1. Whilst we acknowledge that we are not the expert authority on Damage Control in respect of the Swing Bridge incident, reported in MAD Mag Vol 1 No 2, the following may be of interest to your readers:

- a) The Metacentric Height will rise by 0.4 m in respect of a Volkswagen and Cattle Truck loaded onto the upperdeck in this fashion. The cyclists, who we assume dismounted, constitute a moving load, similar to a Free Surface effect, and would be negligible in this instance.
- (b) In spite of all the sniping at the Design Divisions by ill-informed Naval Personnel, the incident highlights the need for certain safety features such as guardrails. A concussed driver could easily have opened his door and gone over the side had it not been for such fittings.
- c) The article failed to draw attention to the need for an indate test certificate for the anchor and cable gear when used in the "attachment to buildings ashore" mode.

2. Our legal advisers also believe the drivers could be successfully prosecuted for either breaking and entering or leaving the scene of an accident, depending upon whether they eventually fell into the water or not.

3. This Staff also consider the treatment of the Swing Bridge Operator somewhat harsh. In any damage scenario, there is little merit in consulting the Bridge NBCD Class Book to determine whether a swing bridge with a car at the apex constitutes a crane with a load at the Jib.

4. Lastly, effective action damage control relies upon accurate damage reporting, leading to sound engineering judgements based on all the facts. In this instance the accuracy of the reports left a lot to be desired, ie: the difference between a VW Polo and a Golf could be critical as far as the Action NBCDO is concerned.

Yours sincerely,

**T O P Waite**  
Constructor Cdr RCNC  
Hull Group  
Staff of CINCFLEET  
18 South Terrace  
HM Naval Base  
Portsmouth  
Hants

## Dear Editor, A DAY IN THE LIFE OF....

The first edition was good, the second was EXCELLENT! Interesting articles, great photographs and Tugg's cartoons make for a winning combination - please keep it up!

I do have one suggestion. How about a regular profile of various people within the Diving and MW Worlds? Something along the lines of 'A day

in the life of .....", with emphasis on the job rather than the personality. I'm sure readers would like to know what a MOD staff officer does, or how an MCMV coxswain spends his day! It would be a good insight into other people's jobs, and a way of finding out which appointments/drafts to volunteer for (or avoid!). Is there any support out there?

I will certainly volunteer my story, but I'm sure that you don't want to hear about my swimming pool, the barbecues, the LOA, etc, etc!

Yours aye

**C J Sherman**  
Lt Cdr RN  
USN Exchange C/O BNS (Washington)  
HMS SAKER  
BFPO 2

## Dear Editor, RNR MCM OPERATIONS

I was interested to read in Vol 1 No 2 your explanation of the statement contained in the Editorial of Vol 1 No 1 that the RNR MCM Branch was still in its infancy and your acknowledgement of the long standing service rendered by Ratings of the RNR Minewarfare Branch.

However the formation of the MCM Sub Specialisation for RNR Seaman officers as set out in HTM(R) 30/89 only recognises that with the allocation of MSFs to the RNR the broader based experience of minewarfare, including minehunting, will steadily diminish unless new initiatives are taken. This knowledge is required to enable RNR officers to fill billets in MCMTAs and MHQs.

I must reiterate however that many RNR officers still serving have a wealth of experience and expertise in all forms of Mine Countermeasures. It is not that long ago that the last MHC left the RNR and that the Sweep Deck Director of a 'TON' was the First Lieutenant. 'Let there be credit where credit is due'.

**J L Galpin**  
Cdr RNR  
Commanding Officer  
Tyne Division RNR  
HMS CALLIOPE

## Dear Editor, HUNT CLASS JRs ACCOMMODATION

The article about HUNT CLASS Junior Rates Accommodation in May's issue was studied with interest by my Ship's Company.

Whilst supporting the need to improve the current situation we have concluded that the proposal in your article has one serious flaw: the 'Rec Space' is too close to the 'Gash Chutes'.

**K M Riches**  
Lt Cdr RN  
Commanding Officer  
HMS MIDDLETON  
BFPO Ships

# More Letters



## Dear Editor, SEA DADS

In response to George Kegg's article in MAD Vol 1 No 2 entitled "Where Have all the Sea-Dads Gone?" I would like to bring to light an experiment which was carried out, and which addressed some of the points made in that article.

Last year, whilst serving on HMS LEDBURY, we found ourselves in a dilemma. BOST and Calendar work up were looming ominously on the horizon and Drafty, in his infinite wisdom, had made us custodians of 5 "Baby Muppets" within the space of a few months.

How could we be ready for these tasks with such a lack of experience? With visits, BMP, leave periods etc, practical training time for the young neophytes was going to be precious! Taking into consideration the lack of practical minewarfare experience (and of life in general) the 1st Lt produced "a cunning plan!"

Each of the 4 LS(MW) and the PO(MW) was to take one of the said seamen and personally encourage and help him along in the hope that we might accelerate their learning. (Brainwashing?). By this I mean spending just a little extra time imparting some of our sacred knowledge on a personal basis; playing Sea-Dad if you like! Realising that the very mention of "Task Book training" causes temporary amnesia in the average Sea(MW), a different approach was thought necessary and the plan went into action.

After a short time the Sea(MW) showed a greater willingness to learn and their confidence seemed to increase quite dramatically, but did the plan work? At the end of '89 LEDBURY had successfully located a downed Phantom in less than 78 hours in poor conditions, received a good for both BOST and Calendar work up and was also rewarded the Plessey Trophy for Best MCMV. Quite outstanding in view of the facts I have outlined, and I believe partly due to the Sea-Dad approach.

Now, many might say that there are no longer the 4 LS(MW) to carry out the same! That is true! But LEDBURY was an exception with 5 Sea(MW), 1 A/AB(MW) and good "ol" Yorkie Lambert to hold the fort! A more normal Sea to AB(MW) ratio would still suit the Sea-Dad method.

The results of a good minewarfare team are only proportional to the effort put in, and the system worked on the LEDBURY due to that fact, -from the 1st Lt taking the time to discuss the problem and the LS taking time to help the Sea(MW), and finally the effort that the Seamen gave back.

There is still a place for Sea-Dads today!

Stay Healthy!  
"Ronnie" Barker  
PO (MW)  
MDDS SMOPS  
HMS NELSON (Gunwharf)  
Portsmouth  
Hants

## Dear Editor, WRONG CHOICE OF PHOTO

"Minewarfare And Diving" Vol 1 No 1 was a tremendous achievement but on the front cover it highlights the problem of the MCD Branch. In my two years at Rosyth, I learnt that divers are all individualists and each one has a different solution to any problem. Diving is central to their being and HMS Challenger demonstrates their success. But minewarfare is about Ops. Rooms, sonar and underwater vehicles. It is about team work, warfare disciplines and drills.

It makes sense that the two specialisations are joined in one branch, but a better front cover would have been a picture of HMS Sandown using her propulsion system to pivot in a similar manner to 'Challenger'. This would have demonstrated that the Branch had grasped its future primary task. Whilst there will always be a need for divers, with increasingly sophisticated underwater vehicles the need is becoming less central to the main thrust of the Branch.

I hope that future editions of the magazine will tend towards correcting the impression given by the choice of the first cover.

Barry Clarke  
ex-COMMW

● HMS SANDOWN featured on the front cover of "Minewarfare And Clearance Diving" magazine, the trial "combined" edition, published in Summer 1989 (and the direct forerunner of this publication). It is a policy of the Editorial Committee to report topical minewarfare and diving events, safety regulations and achievements, whenever possible linking the front cover photograph with a main feature article, and to leave policy statements and comments to senior contributors. Given Challenger's considerable achievements in the months preceding the publication of Vol 1 No 1, perhaps it was provident to have given her so much coverage: it now stands as a tribute to those very achievements, perhaps even an obituary, given her recent demise and subsequent decommissioning.

## Dear Editor, D-DAY MINESWEEPERS

The feature on Vol 1, No 2, page 25, . Whilst not detracting for one small moment from the wonderful work done by these "P" Parties, perhaps the enclosed signal extract will show that it was a team effort and that the Royal Naval Patrol Service was also involved.

I was serving on HMBYMS 2188 during this operation and we were also present when the liner "Europa" was swept out of Bremen and took her right out to sea where the escorts were waiting.

Our flotilla of BYMSs was at Omaha Beachhead and we cleared the harbour at Cherbourg, although not at such close quarters as the divers. However, as I have stated, it was a team effort for all that.

From: The Captain M/S Forces "A" , To: All M/S Vessels. 29 Nov 44  
The following signal(s) have been received:

1. From Supreme Headquarters of the Allied Expeditionary Force, signed, Eisenhower, to the Commander-in-Chief, The Nore.

"On the successful conclusion of the operation to open the River Schelde, culminating in the arrival of the first convoy at Antwerp, to-day Tuesday, it is desired to record my appreciation of the services performed, under your direction, by the officers and men of the Minesweeping flotillas and other forces engaged.

The work has been completed, in the face of adverse weather conditions, in almost a week less than the estimated time, which reflects great credit to all concerned". 281845 / A".

Will Davies BEM  
3 Lister Green  
Malpas  
Newport  
Gwent NP9 6FD

# Diving and Minewarfare Training



## KILLICKS' MW TRAINING

by Pete Cawsey

"Are our Leading Seaman (Minewarfare) trained well enough?" asked Alan Bainbridge in Vol 1 No 2.

Now having drawn my coat, brown, instructors for the use of, I think the question should read "Are our Leading Seaman (Minewarfare) trained enough?" (I like to think all students leave GUNWHARF trained "well").

LS(MW) 55 course have just completed a new instructional package of CAAIS, JHA operations and SOC's, from a "behind the table" point of view. In addition to this module they still covered a 6-day classroom/practical session as sonar operators - and I know from previous ORS experience that it is good to be able to rely on my killick being knowledgeable

enough to assume certain responsibilities and take on the On Job Training of Seamen (Minewarfare), who may have been unsure of SOP's for minehunting.

With the advent of Warfare Branch development, the LS(UWW)(?) of future years is going to be a more competent and useful operator. But right now our training is aimed at the LS(MW) of today.

Yes, there is scope for the LS(MW) to act as MHD on board a HUNT Class MCMV, but with approximately 115 Leading Rates in the branch, I feel the requirement for "On Job Training" by the MW Senior Rate on board, will remain for some time.

## PEARL DIVING ANNIVERSARY

by John Gandy

The 25 May 1990, at the Director of Marine Services' Diving School, Rosyth, Fife, saw the successful completion of another class of Basic Air Divers. This occasion marks 30 years of Diving Training for both the Armed Services and Civilians, in all aspects of diving.

The Basic Air course has been designed to equip the diver with all the skills and knowledge required to enable him to work safely in today's Commercial Sector. Training includes the use of Power Tools, Cutting, Welding, and now includes the use of a Wet Bell.

Successful students are awarded the Health and Executive Part 1 Certificate. The School was originally set up during 1960 to train MoD Civilian Divers in the use of the old Standard Diving Equipment (hard hat).

In 1976 the Manpower Services Commission (MSC) used the school to run a "pilot commercial diving course" which was used as the basis for diver training which resulted in the MSC setting up the Fort William Diving School on the West Coast of Scotland, the rest they say is now history.

The DMS Diving School has retained it's "approved" tag given by the Health and Safety Executive, who took over from the MSC, ever since. The last class to complete was the 22nd course since 1981.

The School is open to all MOD personnel and the yearly programme is promulgated in DCI's.

## THE KILLICKS REPLY

by LS(MW) 55 Course

After reading Alan Bainbridge's letter (Vol1 No2) it appears to us that it is not the LS(MW) who is to blame but the people above him who do not think the LS(MW) is capable of, or won't allow him the chance to prove his ability in, a wide range of jobs.

Our LS(MW) course is the first to undergo an expanded CAAIS package which will enable the LS(MW) to set up the Ops Room for, and carry out, SOC's.

The minesweeping side of the course is much the same as the PO(MW)'s with a little less emphasis on control orders; admittedly the PO(MW)'s mine hunting side of the course involves the running of the mine hunting while ours still covers the operating, but as we are still employed as operators, what can you expect.

To upgrade the LS(MW) course any more could only be achieved by bringing it into line with the PO(MW) course, and then if the LS(MW) is as qualified as the PO(MW), why carry a PO(MW)? -except of course to do the paperwork.

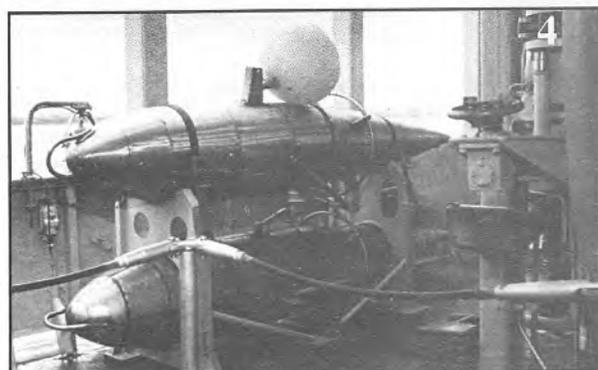
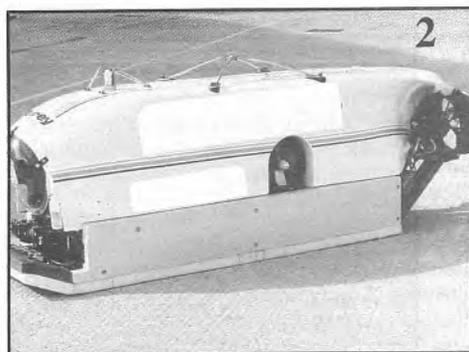
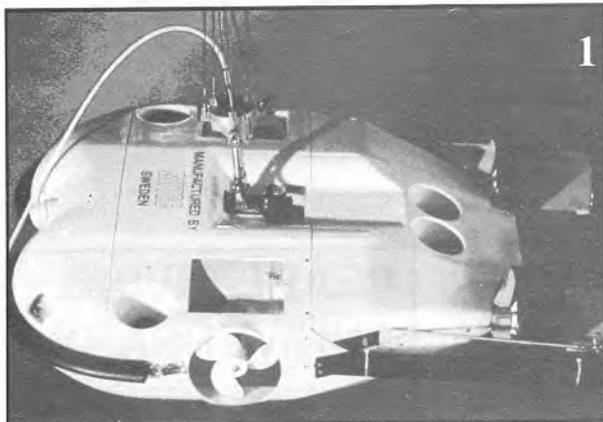
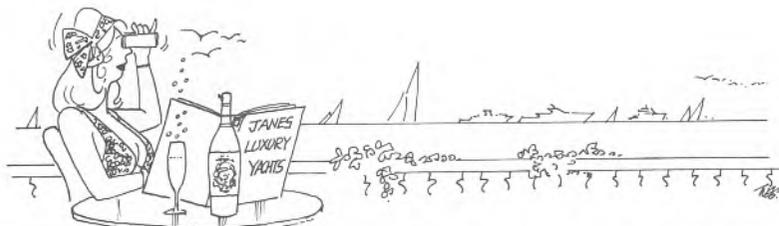
So please, if you are not prepared to let your LS(MW) expand to their full potential, dont knock them because of your own inadequacies.



Leading Seaman (MineWarfare) Course 55

Neil Hodges Alan Stevenson  
Jim Enright Jan Gaffney Andy Sinclair

# Recognition

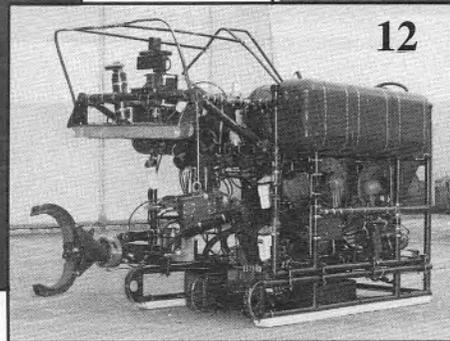
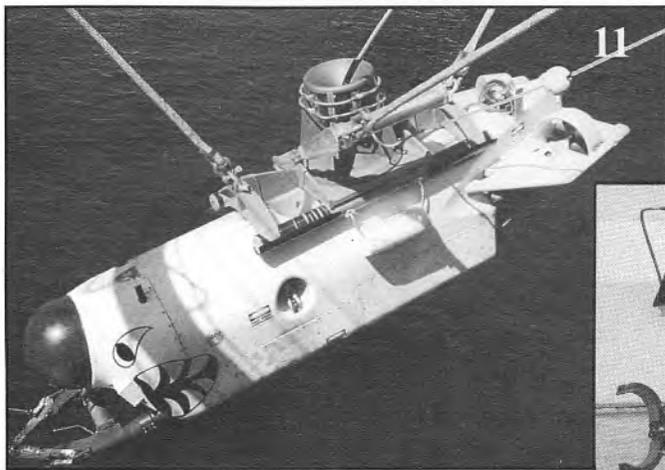
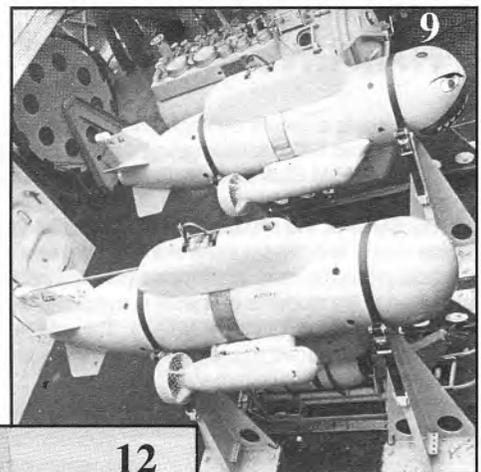
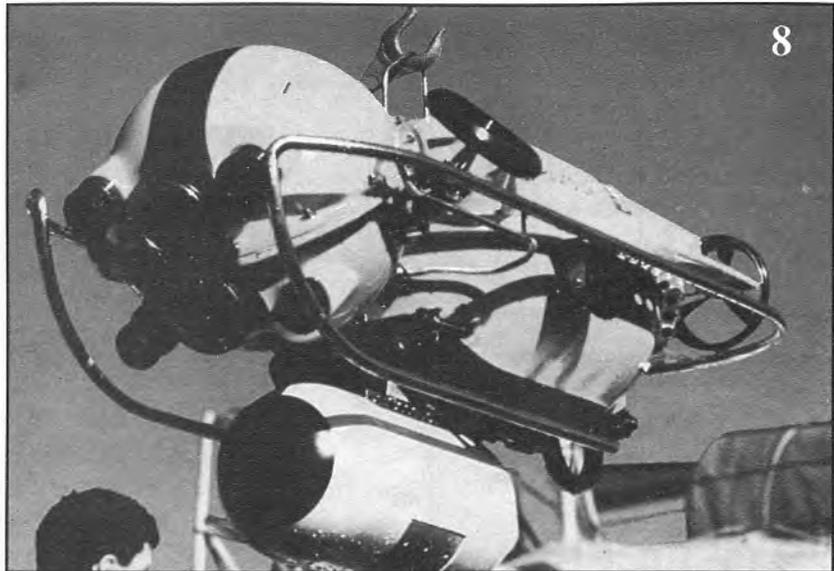
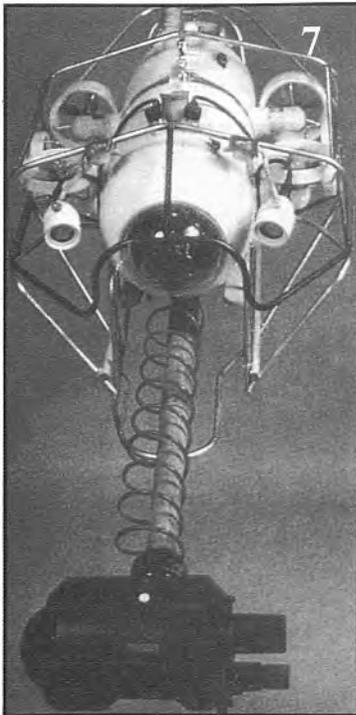


## “REMOTELY INTERESTING?”

Here's a mix of Remotely Operated Vehicles (ROV's) for you to practice your recognition talents. See if you can identify the types of vehicle shown by reporting the ROV title/name and manufacturer. A "Joker" is included amongst the selection.

The solutions are on page 37.

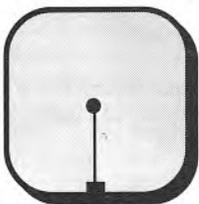




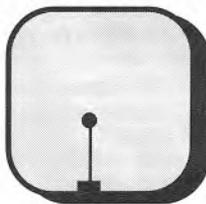
# RECOGNITION RIPPER

13

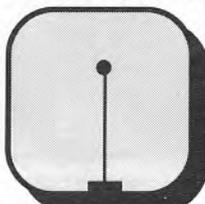
## ROV Control Screen Recognition



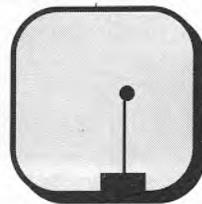
SADAF 120  
MOORED MINE AT  
30 METRES



SHORT-TETHERED  
MK 28 MINE  
AT 50 METRES



POORLY-LAID LOBSTER  
POT MARKER BUOY  
AT 15 METRES....



....NOTE SIMILARITY TO  
SUBMARINE PERISCOPE  
AT 5 METRES

● By Dave Carey. Non-MODUK photographs by courtesy of respective manufacturers and Jane's Information Group.

# Divers Dits



## RNR OFFICERS UNDERGO MCMTA TRAINING

Shown right is a recent photograph of several senior Royal Naval Reserve Officers undergoing training during their two-week RNR MCM Staff Officers Course. The location is the recently-refurbished Minewarfare Tactical Trainer (MTT) in MDDS SMOPS, the situation is an MCM development in the Clyde areas, and the solutions are many and varied. Tactical problems, supported by a series of scenario signals, are given to the students who work in syndicates representing MCM Tasking Authorities (MCMTA's). The course, which runs annually, is designed to prepare Reserve officers for MCM Squadron or Staff appointments. The MTT is available for use by any MCM Squadron or Staffs and a wide variety of areas and scenarios are available.



● *Capt BELTON and The Rev Trevor BEASON with the helmet which will stand at the entrance to the Education Centre at Winchester.*

## In Memoriam

**On 8th May 1990 Captain CPR BELTON RN Rtd, Director of Marine Services (Naval) presented a Standard Diving Helmet to the Dean and Chapter of Winchester Cathedral.**

The presentation was to commemorate WILLIAM WALKER who, between 1906 and 1911, saved the Cathedral from collapse by underpinning the flooded foundations, wearing Standard Diving Equipment.

The Marine Services were the last to use this equipment and finally declared it obsolete in 1988.

# Stan-Speak

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

**I am hungry/thirsty**

J'ai faim/soif  
Ich bin hungrig/durstig  
Ik heb honger/dorst  
Ho fame/sete  
Tengo hambre/sed

**I am hot/cold**

J'ai chaud/froid  
Mir ist heiß/kalt  
Ik heb het warm/koud  
Ho caldo/freddo  
Tengo calor/frio

**I am in pain**

Je souffre  
Ich habe Schmerzen  
Ik heb pijn  
Ho dolori  
Estoy dolorido

**I cannot sleep**

Je ne peux pas dormir  
Ich kann nicht schlafen  
Ik kan niet slapen  
Non posso dormire  
No puedo dormir

**Tell me the truth**

Dites-moi la vérité  
Sage mir die Wahrheit  
Zeg me de waarheid  
Mi dica la verità  
Dígame la verdad

**Good?**

Bien?  
Gut?  
Goed?  
Bene?  
¿Bien?

**Bad?**

Mal?  
Schlecht?  
slecht?  
Male?  
¿Mal?

**Call the doctor/nurse**

Appelez le docteur/l'infirmière  
Rufe den Arzt/die Schwester  
Roep de dokter/verpleegster  
Chiamate il dottore/infermiera  
Líame al médico/enfermera

**I am going to be sick**

Je vais être malade  
Ich werde krank  
Ik word misselijk  
Mi viene da vomitare  
Me voy a marear

**I must go to the toilet**

Il faut que j'aille aux toilettes  
Ich muß auf die Toilette  
Ik moet naar de w.c.  
Devo andare al gabinetto  
Tengo que ir al baño

**I feel better/worse**

Je me sens mieux/plus mal  
Ich fühle mich besser/schlechter  
Ik voel me beter/slechter  
Mi sento meglio/peggio  
Me siento mejor/peor

**Help me get up**

Aidez-moi à me lever  
Hilf mir aufstehen  
Help me opstaan  
Aiutatemi ad alzarmi  
Ayúdeme a levantarme

**The sea never changes**

La mer ne change jamais  
Nur das Meer ändert sich nie  
De zee verandert nooit  
Il mare non cambia mai  
El mar no cambia nunca

**Bring me a telephone/newspaper/steak**

Apportez-moi le téléphone/journal/un steak  
Bringe mir ein Telefon/Zeitung/Steak  
Brenge me een telefoon/krant/biefstuk  
Portatemi un telefono/giornale/bistecca  
Tráigame el teléfono/periódico/un bistec

**Things are not what they were**

Les choses ne sont plus ce qu'elles étaient  
Es ist alles nicht mehr so, wie es einmal war  
Het is niet meer wat het was  
Non è più come una volta  
Las cosas no son como antes

**Is your daughter pretty?**

Votre fille est-elle jolie?  
Ist deine Tochter hübsch?  
Heb je een knappe dochter?  
Tua figlia è carina?  
¿Es linda tu hija?

**How do I find the black market?**

Y-a-t-il un marché noir?  
Wo finde ich denn den Schwarzmarkt?  
Waar is de zwarte markt?  
Dove è il mercatino?  
¿Cómo puedo encontrar el mercado negro?

**A sailor's life is hard**

La vie du marin est dure?  
Das Leben eines Seemanns ist hart  
Het zeemansleven is zwaar  
La vita del marinaio è dura  
La vida de un marinero es dura

**Let's have a shot of rum**

Prenons un coup de-rhum  
Laß uns einen trinken gehen  
Laten we een glaasje rum nemen  
Beviamo un bicchierino  
Tomemos un trago de ron

## More (Blackfoot) Letters

Dear Editor,

### THE ORIGIN OF THE BLACKFOOT SYMBOL

Back in August, 1958, when the Americans went into Lebanon, 4 Coastal Minesweepers (CMS) were on patrol off Cyprus, while the Flotilla base ship, WOODBRIDGE HAVEN ("WOO-HA"), and 4 others were off Turkey for a DRAGEX. Instructions arrived for Captain Inshore Flotilla to take "WOO-HA" and 4 sweepers and transit the Suez Canal. The four which went all belonged to the 104th Squadron; they were WALKERTON with the Squadron Commander (MS 104) on board, WILKIESTON, LULLINGTON and KILDARTON. The former two were fitted with the English Electric Napier Deltic diesel engines - more powerful but less docile than the Mirlees diesels in the latter pair. The Deltic boats were also the latest type, with enclosed bridges (!) and a modified wheelhouse & charthouse arrangement.

For some time after clearing Suez, the tiny force did not know exactly which way to go; were they going to Aqaba to back up the British Paratroopers squatting round the airfield at nearby Amman or were they to go to Aden? Awaiting instructions, the ships steamed slowly south literally sweltering under the hot August sun.

Nobody knew what life in a CMS would be like under such conditions since these were the first of their type to sally forth into the Red Sea. To add to the discomfort of living on the messdecks, where the temperature for days on end was between 95 and 100°F, and the inevitable water rationing, the ships had to contend with a stern wind which reduced the breeze to almost nothing. In such conditions it became necessary to wear as little as possible to prevent prickly heat, so most people went round in a pair of swimming shorts and left it at that.

It was during these hours that the diesels, protesting at so much slow running, decided to rebel. As the second morning dawned each of the sweepers found to their horror that their upper decks and superstructure were covered in a mass of tiny specks of unburned diesel oil. Throughout the day the deluge continued with ever increasing momentum, especially in the Deltic engines ships, until by that evening great drops of black sooty oil were swimming around on the water that the respective Buffers were running over the wooden decks, in a vain attempt to salvage the wreck of what had twenty four hours before been their pride and joy. Everything was done to try to stop the fall out, including increasing speed but so much oil had collected in the funnels overnight that the faster the speed the bigger were the drops that came out. There was only one way to end it and that would have been to stop and open up the funnel and give it the sort of clean that both their position and the time made quite impossible. Shortly afterwards news came through that they were to go to Aden, but the damage had been done. For four days the decks, and thus the soles of everyone's feet, were a dirty, oily black. During the weeks that followed in Aden much discussion took place about the Deltics; for though everyone freely acknowledged their superior performance, all agreed that from a purely non-engineering point of view they were absolutely B\*\*\*\*\*S. It was found that the words 'black feet' came more and more in to the daily vocabulary and after a while the Captain of WILKIESTON put his feeling into writing and proposed that from now on the Squadron should christen itself 'The Blackfoot Tribe' in protest against soaring bills for paint and cleaning gear. He further suggested that the ships might be able to get at least some fun out of their distress if they carried a Blackfoot Badge on their funnels to show that they belonged to the tribe. and that it should consist of a triangle to represent the Greek letter Delta (for the Deltic engines), upside down and in red because all were agreed that they were bl\*\*\*\*\* awful. The inside of the triangle should be white to represent the colour of the wooden decks before the arrival of the engines, and in the centre was to be a large black foot - big toe forward for uniformity... The idea was very favourable received and was, with great enthusiasm, forwarded to higher authority in Malta. Quite by chance, LULLINGTON had on board a Sub Lieutenant who knew of an anthropologist who had actually lived with the Blackfoot Indians in Alberta in Canada. In reply to a request for information, he supplied a great deal of information about the Indians and the more that was heard about them, the more appropriate it seemed that the squadron should adopt the Tribal name. To mention a few, the Blackfoot were horse Indians, with a great sense of humour and courage enough to make them the most feared of all tribes. They were great scalpers, always on the lookout for, and ready to collar, the

itinerant gun-runner. How well this fitted in with the ships' activities round the coasts of Cyprus! There also arrived a splendid colour photograph of an Indian Chief in full regalia and the news that the present Blackfoot chief boasts the splendid name of 'Chief Shot-on-both-sides'. MS 104 himself at that time was an ex-naval aviator, who, if not actually shot on both sides, had at least been shot at on both sides. To the general delight of everyone, some weeks later, when all the founder members were back in Malta, approval came from the Commander In Chief for the badges to go up; 'to be worn as long as the oil flowed....' within twenty four hours the stencils were made, the news was flashed to Cyprus and Aden, and the Blackfoot tribe, although it didn't know at the time, had eight new blood brothers.

As a postscript, any reader interested in joining the TON CLASS ASSOCIATION, which now has a worldwide membership of almost 500 members should contact me at the address below.

Yours aye,

**Jack Worth**

**Hon. Secretary**

**TON CLASS ASSOCIATION**

**Amethyst**

**Lerryn**

**Lostwithiel**

**Cornwall**

Dear Editor,

### OTHER ORIGINS OF THE 'BLACKFOOT TRIBE'....?

1. The sooty footmark symbol of MCM4's badge arose from the early 'TON' Class minesweepers fitted with Mirlees Blackstone engines. These engines had an endearing habit of coughing conker-sized lumps of soot out of the funnel at each occasion of starting the engine, or suddenly being 'revved up' while underway.

2. The seamen had a constant struggle removing the soot stains and restoring the decking to a standard acceptable to the Squadron Commander. In order to aid the restoration process, 'Teepol' detergent was issued to the affected CMSs. Until then, this commodity was only available to RFA tankers.

3. It is also possible, that the origins of the Blackfoot originated from the coal fired 'ABADAIR' class of minesweeper during the first world war. These ships were notoriously grubby, when compared against the remainder of the Fleet based in Malta.

4. The last 'TON' to be equipped with Mirlees engines was 'REPTON' - there wasn't much room in the engine room with two of these installed. The engine also had a disturbing habit of taking its time before it built up astern revs - it made people think somewhat quicker though, when manoeuvring into harbour.

Yours sincerely,

**C R Graham**

**Lt Cdr RN**

**HMS CLAVERHOUSE**

**Granton Square**

**EDINBURGH**

Dear Editor

### I KNOW, 'COS I WAS THERE....

In 1962 I was the Fo'c'sle Officer of HMS WOODBRIDGE HAVEN in the Far East (Halcyon days - Tiger Tops and San Mig)! The old WOO HA was the support ship for the 4th and 6th MS: all Ton Class MCMVs. Some of these ships were fitted with the new Napier Deltic diesel. The problems with oil throw out at certain powers were not fully recognised and, when the power was increased, vast amounts of soot would shoot out of the funnel onto the upper deck. As the upper deck was often wet (to keep the seams tight) the bare footed Ship's Company would leave nice black footprints everywhere. The weather was hot and we often went barefoot on wooden decks. Hence the Badge.

I am sure this will bring a stream of counter suggestions but it is the answer I was given when I asked the same question some twenty-eight years ago - and the soot still comes out of the funnels .....

**T J Norman-Walker**

**JMOTS**

**RAF Turnhouse**

# MDW TALES !!!

by Paddy Baillie

The feature in MAD Vol 1 No 2 on the new MDW tails prompted me to pass on some information regarding these new toys. Being on the WILTON during some of their sea trials gives me the chance to tell you a bit about their performance.

The trials were conducted off the Isle of Wight last year in moderate weather. They involved a lot of conning runs with both dummy and live MDWs, fitted with the old and new tails for comparison. It provided us with a lot of useful training in the handling of MDWs and sonar drills. The DGUW(N) staff seemed to be quite pleased with the results.

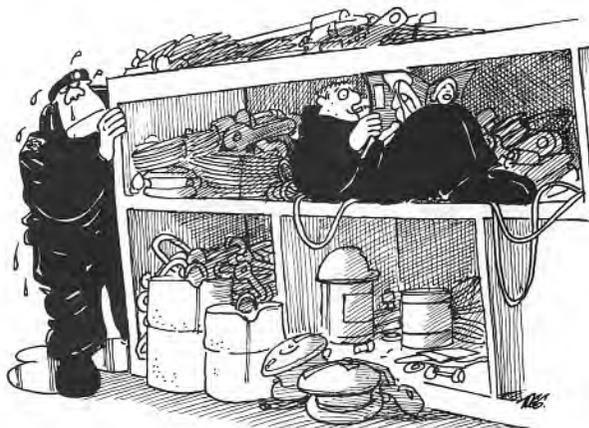
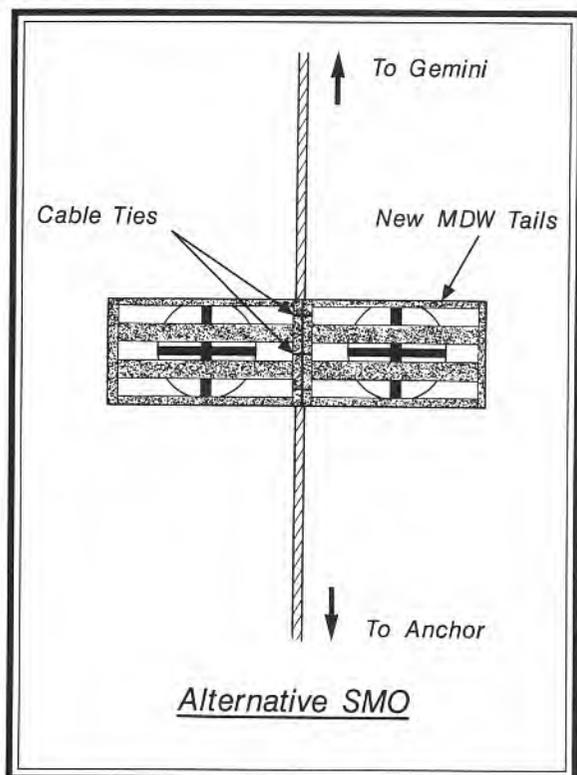
Personally I did not find much improvement on the old style of tails. However they do have the advantage of being lighter and also a much nicer colour than the old olive drab. They are very 'user friendly', provided you have an insight into engineering, and a working knowledge of Meccano. They do require user assembly before use but the main problem we found was actually fitting the new tail to the weapon.

As can be seen in your photograph, they have two different recesses for the securing bolts. The two at the sides are quite easy to get to with the old tail spanner whereas the two at the top and bottom required a different spanner. DGUW(N) staff said they would look into this with the idea of altering the existing spanner or designing a new one.

We also tied two new tails together and replaced an lcos with them on a SMO. The divers reported that this modification to the SMO was quite useful in that: it weighed less and they didn't have to work as hard to recover it (wimps!); being dayglow orange it was easier to see in the murky depths; the horizontal bars provided excellent securing points for those little glowing sticks they love so much. Two tails may be a bit cumbersome, but I expect that one would suffice.

One final point is that painting the little polystyrene reflecting ball in the centre with Silverene, to improve its sonar signature, does not work. It only infuriates the buffer when you get it all over the sweepdeck.

All in all, these new tails may be a great idea, and I'm sure a lot of time and effort has gone into their development, but why not just give the Tons some MDCs and a PAP and save on the development costs for a weapons system which will sadly leave us with the demise of the faithful old Coniston class.



# RETURN OF THE NURTON

by Taff Powell

After 15 months or so in the hands of BTL at Rosyth, December 89 saw the return of Nurton to the MCM world and the Royal Navy, though not as an operational unit.

After 2-3 weeks of SAT's, the major problem remained the port shaft, this requiring numerous trips on the synchrolift and countless VA trials. The other problem was the 193 sonar, this delaying SAT sonar for a while. A few minor problems also arose, eg: who was going to have more space in the Ops Room, the Corro, the Bosun or the WEO?

Then came Monday 26 February 1990 and Weapons Training Week. This was our run up to BOST, with many evolutions taking place with HMS GUERNSEY and as a single unit. On completion of this week, a working weekend followed, to prepare the ship for the following day.

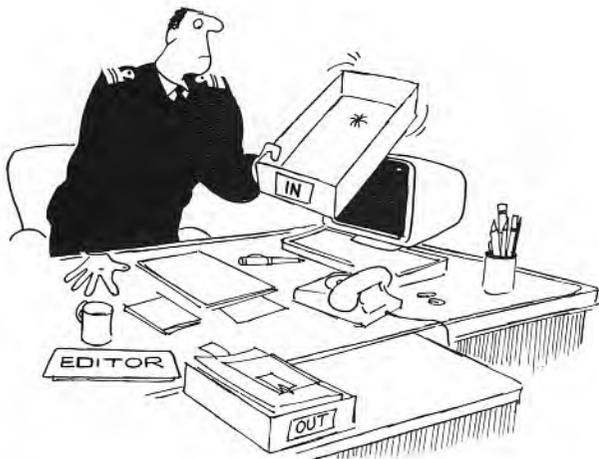
So came BOST day 1. This day was taken up by CST's rounds and Staff Sea Checks, with every man and his dog coming onboard to inspect our departments' condition. The remainder of the week was spend day running, carrying out OOW manoeuvres., seamanship evolutions and a GUNEX, as well as A LITTLE BIT OF NBCD, all exercises being done in slow time.

Week 2 started with MCM exercises and seamanship evolutions with Upton. This lasted all week with a co-ordinated GUNEX by NURTON. As expected, the "Wreckers" also had their pennies' worth. The final week was spent on our MCM assessment. The staff were reluctant to give a result: the weather had made the conditions unsuitable for most MCM evolutions. The last day was spent on our general assessment, where, as on our SSC, every man and his dog was onboard.

Our efforts in BOST gained us a V. SAT, which is good seeing that only 3 of the MW JR are TON trained. Another factor was that we had no Buffer throughout refit or BOST, this left the Bosun, CPO(MW) "Taff" Evans, far from impressed.

On the final day we had our BOST de-brief from CST and Commander MCM 3 (Cdr R E D House RN). He welcomed us back into the squadron, (not that we ever left in the first place). We then sailed for Portsmouth to join up with the remaining ships of the Portsmouth part of the Third MCM squadron.

# 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 / Letter To The Editor, typed, double spaced and word-counted.
- (b) a photograph  / slide  / diagram  No. of items:   
of.....
- (c) less than RESTRICTED in classification

3. I realise that the Magazine publication dates are 1 Jun / 1 Dec 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 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 II

### Answers To Big Badge Challenge II

Many replies were received in response to the Big Badge Challenge II in the May edition of MAD Magazine. The best answer, from POMEM(M) J BUCHAN and MEM (M) G J L GREEN, of HMS LEDBURY, is published below. The two runners-up are as at right, on this page.

No disrespect is intended by publishing the most humorous reply to any such competition and it is hoped no offence will be taken, in keeping with the spirit of the magazine.

**Dear Editor,  
BIG BADGE CHALLENGE II**

At the end of the Great War, the Admiralty appointed an INTERNATIONAL MINE CLEARANCE COMMITTEE on which 26 countries were represented. The Supreme War Council allotted each Power an area to clear, the largest falling to Great Britain. The background being that sweeper losses for the Great War were 214 vessels sunk and some 40,000 square miles of sea needed searching after the war ended.

So, in February 1919, a special Mine Clearance Service was established with special rates of pay and conditions of leave (danger money?), which explains the identifying cuff badge and the special cap-tally.

By the end of November 1919, over 23,000 Allied and 70 German mines had been swept with the loss of half a dozen sweepers.

The Americans had cleared the Northern Barrage between the Orkneys and Norway, where 56,033 American and 15,093 British mines had been laid over an area of 6,000 square miles.

On completion, the Minesweeping Division at the Admiralty was disbanded. Later, one flotilla of Fleet Minesweepers was commissioned for training and this flotilla was later joined by three trawlers from the RNR. This unit was named the Royal Naval Patrol Service and fortnightly courses were run from Portsmouth - as highlighted in your first Big Badge Challenge.

I hope this will enlighten you and your readership somewhat.

Yours sincerely,

**POMEM (M) J Buchan and MEM (M) G J L Green  
HMS LEDBURY  
BFPO Ships**

**Dear Editor,  
ROYAL ENGINEERS -CLAIM TO FAME**

I immediately recognised the badge in Vol 1 No 2.

It was issued to Royal Engineer Divers serving in South Africa just after the Zulu War.

We were tasked with clearing mines laid by Cetewayo along the Durban coastline.

The badge itself is a little misleading. That is not a mine in the centre it is in fact a Zulu shield with assegais passing through it.

I am pleased to be able to set the record straight.

Yours sincerely,  
**C W Pasley  
Major General  
Father of Military Diving  
Aged 210**

P.S. I enclose a photograph of myself. The badge is in my coat pocket.



**Dear Editor,  
BIG BADGE CHALLENGE II**

I would submit that Big Badge Challenge II shows the badge - awarded to those who served on minesweepers during the "Great War" (1914-1918), and that the qualification to wear it was a minimum of 6 months aboard a minesweeper.

My life has always been linked with the sea and ships; firstly during the 39-45 War, I was proud to serve both on minesweeping trawlers, and later on a Flower Class Corvette. I do not want you to think I am boasting, but my service with the RNPS took in Minesweeping convoy escorts on the North Atlantic, (including; North Russia, and Gibraltar), to D-Day landings at Normandy.

Enough of swinging the lamp.

I wish to express my gratitude om receiving Volume 1 Number 2 of MINEWARFARE AND DIVING. You are to be congratulated on presenting such a fine magazine, filled with such interesting information and excellent photographs.

Yours sincerely,  
**J C Mather  
9 Torbreck Street  
Bellahouston  
Glasgow**

### Recognition Quiz Solutions - Page 30

- |    |                    |               |                          |
|----|--------------------|---------------|--------------------------|
| 1  | DOUBLE EAGLE       | SUTEC         |                          |
| 2  | TRAILBLAZER        | ISE (FAIREY)  |                          |
| 3  | PAP 104 MK5        | ECA           |                          |
| 4  | OROPESA FLOATS     | JOKER         |                          |
| 5  | SEA OWL            | SUTEC         |                          |
| 6  | DOLPHIN (SEA LION) | ISE           |                          |
| 7  | SEA EAGLE          | SUTEC         |                          |
| 8  | PLUTO              | GAYMARINE     |                          |
| 9  | PAP 104 MK1        | ECA           |                          |
| 10 | MIN                | SMIN          |                          |
| 11 | MNS                | HONEYWELL     |                          |
| 12 | SCORPIO            | AMETEK STRAZA |                          |
| 13 | RIPPER             | JOKER         |                          |
|    |                    | <b>TOTAL</b>  | <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, William Street, Southampton, Hants,SO1 1QL. Details and prices are available on request, care of the above address, or Tel. 0703-223434.*



**BATTLE HONOUR:  
DIEGO SUAREZ 1942**

## **BIG BADGE CHALLENGE III**

The badge illustrated above belongs to the newest addition to the MCM Flotilla, the Sandown Class minehunter, HMS CROMER. The vessel was launched on 6 October 1990, at Woolston. The origin or background stories relating to this badge would be greatly appreciated. Of particular interest would be any "tale behind the pig".

The best replies will be published in the next Edition (1 Jun 91). Stories generated from BIG BADGE CHALLENGE II (RN Mine Clearance Service) are on Page 37 of this Edition.