# MINEWARFARE & DIVING


2003 EDITION

# Contents




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# Foreword

Commander Simon Nicholson RN
Superintendent of Diving

In a year where all aspects of Minewarfare, Diving and EOD have been so prominent in world-wide Royal Naval operations it is an honour to be invited to write the forward to this excellent magazine.

Beginning with mine warfare, the inspired and pro-active decision to deploy MMs to the Gulf well in advance of OP TELIC set in motion a train of events which resulted in the complete success of MCM operations in support of the war in Iraq. Innovative thinking, rapid procurement to meet the threat and practising our war fighting skills at unit level meant that when the call came nothing was found wanting. The MCMTA was prepared, 6 MMs were on task and all the necessary support was in place. Particular successes such as SWIMS and minesweeping from a mine hunter whilst simultaneously hunting are all represented in this edition and are a testament to the well-focused professionalism of the branch. MMs were deployed first, stayed the longest, got the job done and then came home.....terrific! Oh yes and whilst that was going on the day jobs continued unabated; Exercises, NATO Standing Forces, Fishery Protection, Visits and other general RN tasks. As ever, a busy year.

The diving and EOD tasking completed during Op TELIC was also very impressive and there are separate articles about those operations in this magazine. The work done by the Fleet Diving squadron played a significant role in the successful military outcome of the war and all involved can be justifiably proud of their efforts. Small teams from NDG and SDG continue to be deployed all over the UK to deal with many differing incidents. Some are exciting and some are routine but the impression I get from talking to the teams is that the jobs are professionally rewarding and contain enough elements of fun to keep the enthusiasm going. I would like to take this opportunity to congratulate CPO CARRS on his QGM. A big old WWII bomb in Pompey dockyard certainly got everyone's attention and SDU2 showed the branch at it's best.

Turning to diving equipment, I will not try and sugar the pill here as you are all well aware of the setbacks we have suffered during the past months. That being said I am confident that the correct actions have and are being taken to ensure we get diving equipment which is fit for task and as safe as can reasonably be achieved. The introduction of upgraded CDBA and SABA will both increase our operational capability and give us safer sets. I sincerely hope the new equipment will prove to be more reliable than it's predecessor however you must look after it and make sure all the required maintenance is professionally done.

In summary there is no doubt that the Minewarfare and Clearance Diver Branches remain an essential and valuable part of the Royal Navy's operational capability, our people are well trained, highly motivated and respected for their abilities at the very highest levels of the Service. The challenges are many and the articles in this magazine show how well you have all continued to deal with them.

# Diving Standards & Diving Safety

Cdr Simon Nicholson RN, Superintendent of Diving

The introduction of the Diving Standards Team, Diving Standards Checks and the requirement for a comprehensive Diving Safety Management System will by now be familiar to all divers. The rationale for these changes is simple; military diving is a challenging business and carries with it a significant amount of risk. It is not my intention to create a risk-shy diving branch, quite the opposite. As an important element of a fighting force you need to be able to operate in risky situations in a winning manner. Therefore a culture of risk managing, not risk avoiding must be the way ahead. Put simply this means every diver and supervisor should consider each task using the "what-if" principal and then formulate a plan to mitigate the risks as much as possible, the new format S288 is designed to help this process. The final requirement is constant vigilance when diving operations are taking place, it really does not matter if the job is a unmarked night attack in nil vis or a "seabed survey" off Falmouth, misfortune can creep up on either operation with tragic effect if your guard is down.

The Diving Standards Team exists for two reasons, primarily to ensure the highest standards of safety are being maintained across all aspects of military diving and secondly to provide an avenue for advice and help when required. A Diving Standards Check will be rigorous so early liaison to get it right will pay dividends.

The Diving Safety Management System is firmly established now and should be in place in all units which operate divers. It is there as a management tool to check if we are getting it right and to quickly identify areas where improvement is necessary. The engine that makes it work is your team so use it and encourage others to keep a lively interest in Diving Safety.

# Ed's Note

Lt Cdr Chris Baldwin RN
SWOMCD
Editor

We did it! Finally got enough copy for another edition of the MAD Mag. Apologies to all those who have been waiting for publication…but without enough copy I simply cannot get the value out of the cost of publication. Many thanks to all those who have contributed and all I can say is that the MAD Mag can only survive if YOU want it to. In future my policy will be that I will accept items of interest at anytime and will compile an edition as soon as there is enough to go to print…so please send me some stuff!

I've been languishing in my ivory tower - well OK brick 3 storey building - with the Command and Advanced Warfare Training Unit, but keeping an ear out for the jungle drums and hearing about various exploits in the Diving and Mine Warfare community. Actually I have managed to keep myself busy: Six more Advanced Mine Warfare courses; a RNR Mine Warfare Staff course; Common Time Sea Week with the PWO course; being the T23 simulator tutor; acting as staff CO for PWO and International PWO courses all of which have provided their own diversions. (OK I admit it I'm empire building, I wanted to fill the jobs box on my OJAR (206) report.) On a more serious and tragic note, I was also the MCD holding the short straw when it came to selecting a technical advisor for the Board of Inquiry for Lieutenant McAuley's death at the end of last year. Of course, and in my view quite understandably, the RN Diving Community are still adjusting to the new safety regimes that modern practices demand.

There have been some major changes since the last publication of MAD with regard to what was then known as SMOPS. The creation of the Maritime Warfare School, incorporating all the training establishments in the Portsmouth area and beyond preceded the announcement that HMS DRYAD will close as a Royal Navy establishment by summer next year. COOK Building will be enclaved and used until 2007. The Mine Warfare Training Unit will move to COLLINGWOOD around Easter 2004 and so will have spent just 9 years at DRYAD since leaving VERNON. The HUNT and SANDOWN Class simulators will be on the road again! Though issues remain to be solved, everyone realises that the King Canute approach will prove futile as ever. So the plan for the move has been meticulously conceived by OIC Lt Cdr Tom Russell, WO (MW) Tommo Thomas and the ubiquitous CPO(MW)('Triremes were great Minesweepers') Taff Reader. So Mine Warfare will have yet another home for inclusion in its life history.

Clearly there are some exciting developments occurring in both halves of the community.

OP TELIC demonstrated some fantastic initiatives on the part of our colleagues and as most people will know was reflected in several awards to those involved in the action. It goes without saying that I believe everyone who took part and indeed those still involved have done a great job. The feedback from the non MW and D personnel that I come across in my job is universally positive and similarly the impression from my frequent visits to BE/NL MW School is that the RN's MW capability is held in the highest regard. So I hope this year's MAD is of interest and that we continue to record the exploits of the Mine Warfare and Diving Specialisations.

*Note: Editions of MAD are archived at the Royal Navy Library.*

# Minewarfare Training at the Maritime Warfare School

CPO Taff Reader

## Introduction

Life has changed drastically in the training organisation since the last update in this magazine. The school of knowledge has changed from being a Section to a Unit. The Training Department has turned into a Training Group, and the Staff Officer Minewarfare into an OIC Minewarfare. All this before the big move of the Unit from Dryad to Collingwood.

Throughout all this, the Unit has continued to keep the training cycle churning, despite the added pressure and commitments to OP Tellic, the fireman's strike, and the inevitable gapping of instructional staff. During 2003, we added another 24 MWO's, 11 PO's, 18 LOM's and some 70 OM2's to the fleet. Whilst also giving TEM's and PJT's too many others. In addition the Unit has also provided training to several other countries, most notably completing the batch two crews for the Royal Saudi Navy.

The next 12 months is also likely to be a very challenging period for us. On the training front we have several issues to keep the staff on the ball. The Introduction of Early Crew Training for the Hunt Class ships as they prepare to be fitted with 2193, is now coming on line with the first ship HMS HURWORTH due to commence training early Feb 04. From April 05, Hunt training will cease while the Units Hunt COT gets upgraded and instructors produce the new documentation for 2193 training. Work is also progressing on the removal of the maintenance modules from OM2 to LOM courses, after the decision to cease maintainer training for Minewarfare Ratings. Whilst in the background to all this staff will be preparing documentation for the next round of RNSF training likely to start in early 05. All this at a time when career course are likely to be running at above maximum capacity. To really cap a busy year the MWS are committed to transfer to Collingwood by September 04. With the MWTU conducting its move to Collingwood in April 04 and this with little or no disruptions to training, a tall order to say the least!

## Transfer of Unit to HMS Collingwood

I am sure by now everyone must be aware that we are moving our training to Collingwood. Needless to say a big part of the last 12 months has been spent on the preparation and negotiating for space which is at an absolute premium. With very little funding available for new buildings and a remit to utilising all spare capacity you can imagine it's not been easy. However all said and done we have come through it with the unit being together and whilst not as close to our practical areas as we have been used to in the past, they are still within easy reach. The unit will cease training in Dryad at the end of March 04, transfer to Collingwood over Easter leave, and start the summer term hopefully with no loss to training. You'll find us on the First floor of Marlborough block half way along. Easily recognisable by the 2 black mines either side of the door in the foyer. The Commodores not seen them yet, but we need to show them we've arrived. Needless to say not only are you welcome to come visit us in our new home, but strongly encouraged. This will be our new house for many years to come.

## Life with the Techy's

One of the great advantages to the transfer has been the opportunity to join up with our technical counterparts. For us this happened in advance of the move, as April last year we amalgamated with the MFP platform in Collingwood, thus creating an Operator and Technical element in the Unit. The last nine months have been spent looking at ways we can benefit each other, this has already starting to pay dividends as we share knowledge and experience, and our training equipment is being better maintained now than it has ever been in the past. We are also utilising the Tech instructors to teach some lessons on career courses such as RCMDS Preps. While the WEO DWEO courses will be benefiting from joining into our sea training periods.

## 2193 Training

2004 sees the introduction to service of the 2193 sonar and Nautis 3 system. As with any new equipment it comes with training package and this is no different. The 193 Trainer staff of

Lt Paul Mcdermott, CPO Scouse Rippon and PO Taff Owen have been working hard behind the scenes providing specialist advice, reviewing software, and preparing lesson plans not only for the Early Crew Training but for future career courses. They have also had the task of overseeing the fitting out and setting up of a state of the art CBT suite, and the yet to be named 2193 COT on our new site in Collingwood. The CBT is now up and running and will be in use for the ECT. However the 2193 COT is not likely to be ready until later this year. The good old Arcturus 193 trainer which has done us proud for so many years is now deemed to be beyond economical repair and will not be moved. It is due to be de-commissioned in April this year and either sold on or scrapped.

The knock on effect to the move of the unit to Collingwood, and the late arrival of the 2193 COT will be that during the Summer and Autumn terms this year all career courses will be taught on the Sandown System. Ship crews arriving for ECT; will spend time in Templecoombe, utilising the manufacturers set. While not ideal, along with the CBT, it should give them a good introduction to the equipment. All being well 2193 career training should commence in January 05.

## Income Generation Training

As anyone who has spent some time in the unit will tell you, income generation is never far away. Beavering away in the background Flagship always pops up just when you think it's quiet with a little bit of extra training. The start of last year saw us complete the training package for the RNSF. Easy life we thought as we used the break to redesign our IG courses, but it is short lived, as the next round of RNSF training is due to start in early 05. Mind you there are some benefits to I G training, as I am sure Larry Lamph will agree. Larry spent several periods in Korea assisting flagship in conducting trials on their minesweeping equipment. This year as well as the usual flow of Canadian, Australian, and American students through our career courses. It looks like we will be doing further training in country for the Koreans, Whilst also sending staff to Nigeria and Morocco to give an introduction into Minewarfare training.

## Promotion Prospect's

The MineWarfare branch just like the rest of the navy is going through a period of turmoil with a shortage of manpower at just about every rate. At the school we see the effect by the lower numbers attending career courses. I am sure those of you at sea feel it first hand by the gaps that are created, particularly at PO level. For those of you wanting to progress life has never been better. Promotion is now available at first shout at just about every level, with places available on every career course. The World is your Oyster. Your career in your hands. Grasp the opportunity and see you Divisional Officer or senior rate NOW!

## Awaydays

Winners 2003

With a training programme that has very little slack. It becomes very hard to provide everyone with the adventurous training or time away from the coalface that they deserve. It was even harder to try and coordinate it for all the instructors to be free at the same time. Keen to build up the teamspirit when the MFP platform joined the unit, it was hoped to be able to go on an Exped. However just a glance at the training programme showed we would never find enough time. So it was that the MineWarfare awayday was born. One day programmed into every term when the unit could close down for a team building day.

It started with Orienteering and a bar-b-Que, at Queen Elizabeth Country Park. The unit split into teams with the first team to complete the route without cheating, winning the MW Challenge Trophy. It was such a success that it has been repeated again, and now looks like being an annual event. In between we have also managed to go bowling, orienteering around a course in London, and survive the pubs! And this winter enjoyed a good old-fashioned ships games afternoon.

Without doubt all were successful, and achieved the objective of bringing the unit

together during some busy terms when even a day out breaks the routine. If anyone out their wants to try them out then why not give me a call for info.

## Removal of Maintainer Training

It's been talked about on numerous occasions, but now it's finally happening. After a study by Fleet, it has been agreed that maintenance training is not sustainable. As from Apr 04, the maintainer Module will cease for all OM's and LOM's. Ship schemes of compliments will be adjusted with OM (W)'s taking over the maintenance tasks. For us it's been a very busy few months adjusting the planned courses to remove these modules without having long periods on holdover. This has been particularly so with the OM2 courses, which have a lot of outside modules, planned well in advance.

## Manpower

This year has seen yet another fast turnaround of staff, but for the first time since I can remember, (and that's a long while). It looks like that by Feb 04. we will be fully manned. We've even managed to change the 2 Hills into the infamous 2 Russell's just to confuse everyone. As always there is a lot of coming and going, so anyone wanting a Pompey draft the school is the place to be. Despite many reservations, I think most staff will agree that being an instructor can be very rewarding, and is always good to have in your write ups. Below is a list of the current staff:

## Minewarfare Re-union

2003 saw the Sixth Minewarfare re-Union. Split over 2 nights, it started with a informal B-B-Que. on the Friday evening at Dryad, giving a chance for a quite evening when everyone could spin dit's of days gone by. It also showed that Taff Davies ably assisted by Jan Takel is still the King of Bar-B-Q's. The Saturday saw everyone get together for the main re-union at the United Services Club in HMS Temeraire. Yet another success despite the over zealous DJ who seemed hell bent on playing the music to loud for everyone to talk, or the bland food, that reminded everyone why Pusser's chefs have such a good reputation. But I think everyone will agree that it was a good get together helped along by Paddy Daly's raffle which raised enough money to subsidise the drinks for quite a while. From a personal point of view it was heartening to see yet another good turn out, especially by

Bungy - Any ideas what he is trying to do?

OIC MWTU Lt Cdr Tom Russell

### Officers Training

| | |
|---|---|
| MWI | Lt Cdr Tim Russell |
| MWOIH | CPO Alan Mills |
| MWOIS | CPO Bob Mitchell |
| MWCSI | Jan Takel |

### PO's Training

| | |
|---|---|
| MW2 | Lt Paul McDermott |
| POIH | CPO Campbell |
| POIS | CPO George Atkinson |

### LOM's Training

| | |
|---|---|
| MW 3 | Lt Cdr 'Jack' Mc Williams |
| LOMIH | PO 'Bagsy' Baker |
| LOMIS | PO 'Taff' Coates |

### OM's Training

| | |
|---|---|
| RTOMW | WO Tommo Thomas |
| OMIH | PO Jamie Dawson |
| OMIS | PO Nobby Clark |

### Sandown Trainer Staff

| | |
|---|---|
| STC | CPO 'Paddy' Daly |
| STD | PO 'Ginge' Ableson |
| STO | Mr Steve Cross |

### Hunt Trainer Staff

| | |
|---|---|
| HTC | CPO 'Scouse' Rippon |
| HTD | PO 'Taff' Owen |
| HTO | LOM 'H' Harrison |

### Admin and Support

| | |
|---|---|
| MW Manager | CPO Taff Reader |
| MWTFC | PO Sterling Moss |
| MW Admin | Mrs K Bray |

the younger element of the branch. It makes all the hard work worth while. The 2004 Re – Union will reach the planning stage soon, once Tony Mulrain settles into the chair. It's likely to be in September again so keep your diaries clear. In the meantime, If you have any ideas of venues, which you think would suit then please, drop me a line or give me a call.

## Leavers from service 2003

A lot of good guy's left the service in 2003. Here are a few that we saw pass through the doors to Civvy Street via the Unit Lt Cdr Paul Raisbeck, CPO Taff Davies, PO Steve Westby, PO Nobby Clark, PO Simmo Duggan (alias Simmons).

Our thanks go to all of them not only for there time in the service, but the way they continued to dedicate time to training whilst preparing for the new careers.

Taff Davies being presented with a glass mine by OIC Lt Cdr Tom Russell on leaving the service in Nov 03

# Operation TELIC

## The Fleet Diving Squadron at War

Lt Cdr John Herriman RN

As tension in the Gulf region rose towards the end of 2002 and coalition forces started to build, it became evident that there was going to be a requirement for clearance diving expertise. Not knowing exactly what this was going to be or even if it would be required, a team from the Fleet Diving Squadron was formed in November 2002. Because of the scale of possible harbour clearance missions and other tasks the on call Joint Rapid Reaction Force unit, Fleet Diving Unit 3, were designated as the lead team with Very Shallow Water expertise from Fleet Diving Unit 2, Improvised Explosive Device Disposal specialists from Southern Diving Unit 2, and the Warrant Officer and POMA from the Fleet Diving Group to provide HQ and medical support. Equipment scales were enhanced for both diving and EOD, communications equipment was procured to support extended and remotely deployed operations, and personnel were given military skills training to allow them to survive and fight in a hostile theatre where the threat ranged from chemical attack to sniper activity. This was supported by specialist EOD training and briefings, particularly regarding minefields and booby traps at DEODS and 33 Regiment Royal Engineers. It was an intense period with very little time off and the focus was on ensuring every member of the team was ready for wartime operations by Christmas.

The enhanced unit for operations in Iraq, now formally called the Fleet Diving Squadron (FDS), waited with nervous anticipation for confirmation that they were going to deploy and were placed at immediate notice from the New Year 2003. Final preparations continued until the decision by Fleet was made and the FDS, led by FDU 3, deployed to Bahrain on 8 February 2002. There followed a further period of intense training to make the most of every opportunity as tasking became clearer, creating SOPs to clear berths of explosive hazards, helicopter embarkation and loading plans, Prisoner of War handling procedures and battlefield First Aid. At this time the FDS also met with its US and Australian counterparts as well as with MCM1 embarked on RFA SIR BEDIVERE. The US Naval Special Clearance Team 1 was the Commander Task Unit and they brought with them the Marine Mammal System (dolphins) and Unmanned Underwater Vehicles for remote MCM searches. They also had a diving element consisting of USN SEALS, USMC Reconnaissance and USN EOD Technicians. Additionally, they had the considerable logistics and material support that is the hallmark of US operations. The Australians, similar to FDS in structure, provided additional clearance diving expertise and the roles for both were the same, clearing berths and jetties and diving on unknown items of ordnance located by UUVs and dolphins, in addition to providing EOD and IEDD support.

The FDS embarked on board USS GUNSTON HALL on 7 March for further training and final preparations in the Northern Arabian Gulf, just 20 nautical miles off the coast of Iraq. FDS was committed to providing helicopter EOD support against drifting mines and this and other training was conducted as awareness of missile and fast patrol boat attack increased. Tension gradually rose and the outcome was inevitable, FDS heard that war was declared on 19 March and the team was put on immediate notice for harbour clearance. Intelligence suggested that the threat levels were high; chemical attack, attacks by small groups of Iraqi soldiers not cleared during the initial assault, asymmetric threats from terrorist activity in the form of IEDs and car bombs, as well as the risk of artillery and mortar fire from embedded Iraqi positions. As the unit watched the war on CNN and Fox News the reality of their involvement hit home. Two missions came in, firstly to support the 3 Commando Brigade assault of the Al Faw Peninsula and secondly, to check a mine barge captured by US SEALs. Both deserve mention.

The Al Faw mission, was passed to the Underwater MCM Commander, NSCT 1, with less than 24 hours notice. The decision was made to support it with a combined team from the US and FDS making use of hovercraft from 539 Assault Squadron Royal Marines. It was a dangerous mission, requiring an approach to the beach to open a boat lane for re-supply 1 hour after the initial helicopter assault by the Marines

and SEALs. The beaches were mined, and enemy presence and obstacles were anticipated from intelligence photographs. The combined team made three approaches to different beaches in attempts to get access but mine density was too high with an unacceptably high risk of losing an operator. The decision was made not to progress, which was frustrating when teams were so close to the shore, but it was the right decision because the military gain did not justify any loss of life. The second mission on the tug and barge was interesting because it showed how extensive the Iraqi mining preparations for war had been. SUMAR 250 ground mines (Manta copies) and LUGM buoyant mines were all ready for deployment in barges specially fitted with rails and concealed cut-away sections just above the waterline. There were also rails concealed by oil drums on the upper deck of the tug, none of which could be seen from aerial photographs. At least one barge was subsequently destroyed in an air attack based on the information gleaned from this and similar missions, which confirmed the Iraqi's intention to conduct minelaying operations.

Further tasking came on the evening of 23 March after both teams had returned, a directive (apparently from the US President himself) was that the Port of Um Qasr had to be cleared by the UMCM Task Unit as soon as possible. The MCM Directive changed to Bravo accepting risk to non-remote means of mine clearance. Personnel were briefed, Rules of Engagement given, which were notable for their permissiveness, and everyone settled down for a final night on board before the helicopter lift in. FDS clearance diving teams were given priority for the helicopter move because they offered an immediate diving capability as soon as they landed.

The final briefing was given at 0430 24 March and immediately on completion weapons and ammunition were issued. Bergens and personal kit were given a final check and teams got dressed in NBC kit because of the anticipated threat. It took several lifts in SH-53 Sea Stallions to get all FDS personnel in, but the first two loads brought in the diving capability, which was planned to commence at first light the following day. The port itself had been secured and the last enemy resistance in the area was in the throes of being suppressed as the helicopters came in. Shell, mortar and gunfire were sporadic and were mainly restricted to the town where the Commando Brigade were in action. The other main threat was from Chemical attack and there were numerous alarms resulting in hurried activity to don respirators, everyone was already wearing NBC suits. FDS was co-located with the US and Australian teams, although the warehouse used afforded little protection other than from the elements and teams learned very quickly about the need for effective training to prepare all aspects of war.

Conditions in Um Qasr were poor, warehouse doors had been blown off by EOD teams as the US swept through the port, the air temperature was 30-40 degrees Centigrade with persistent dust and sandstorms. During the first night there was torrential rain and thunder but even this was unable to drown out the noise of gunfire in the town. Perimeter guards were set up, ISO containers used to provide a blockade around the warehouses, and at night flare pickets used to deter any intruders and the numerous wild and stray dogs. The diving conditions were no better, heavy oil and other pollutant contamination in the water, thick mud in the harbour and tidal steams of 4-5 knots with diving windows of less than 2 hours along the berths. There were numerous vessels tied up alongside, some of which had been there since the last Gulf War, and more unnervingly there were pilot boats which had been adapted to carry four mines on specially adapted rails. Eight mines were found on the rails of two boats, which at least meant they had not been laid. FDS also had to commandeer transport and in the greatest traditions of the Diving Branch divers managed to acquire an ambulance, fire engine and fork-lift truck!

The clearance mission in Um Qasr was based around the strategic importance of humanitarian aid arriving, and seen to be arriving, in the country by the Iraqi population and the World press. A berth was prioritised and the jetty clearance mission was allocated to FDS. A UUV conducted runs first to locate possible minelike contacts and these positions were passed to the dive teams who were magnetically ranging equipment for diving against possible influence contacts. Mine threat briefs had already been given and it was just a question of the divers getting in the water to prove whether the contacts located were mines or not. At the same time force protection elements were set up on the jetty to protect against possible Iraqi military who were thought to be still in the vicinity and known to be operating just a few kilometres further North up the channel. The first several dives were conducted with no contacts proving to be mines and it was to be the start of a trend.

At about this time the dolphins started to arrive in the port and they were to provide a capability to search for buried mines rather than risking divers probing in the mud. This put

into practice another set of SOPs. The dolphins would mark a contact and then divers would be called in to place 20lb charges. Charges were used even if no contact could be found because of the chance of mine burial. Over the course of the 15 days in UQ FDS cleared approximately 3 km of berths and conducted 74 dives and nearly 3000 minutes underwater. The Australian Clearance Diving Team was conducting the same mission in different areas, and shortly after both teams were joined by US EODMU 6 Det 6 to assist with the same mission. Tasking was split between all three teams and because they were often on task at the same time had to ensure lateral safety separation in case of an accidental mine detonation. The routines worked well and the berth was cleared for the arrival of RFA SIR GALAHAD. She pulled alongside, with a huge amount of press interest, onto the berth cleared by the FDS on 28 March. After the completion of this task the hard work really commenced, and now joined by NSCT 1 Dive Team who had been solely providing force protection until this point, everyone slogged through the remainder of the port clearing all the berths and diving all the contacts located. It took another 11 days to complete and whilst no mines were found the purpose of the mission was to prove that the port was clear and this aim was achieved. Whilst the port clearance was underway FDS was also involved in two EOD tasks. Firstly leading a mine investigation mission with the US and secondly assisting in the disposal of stockpiles of LUGMs found further inland. At the same time the Australian team disposed of a sunken pilot boat with 4 LUGMs. Um Qasr was a busy place.

After Um Qasr further tasking came to clear the Port of Az Zubayr. It was basically a very similar mission, confirming the berths and waterways were clear of mines so that the Royal Marines based in the Port could have free passage. This mission was conducted in exactly the same manner, utilising dolphins and UUV combined with diver searches. FDS and Australian divers conducted this task as the US dive teams were detached and returned to the GUNSTON HALL. The clearance of the port took 11 days, but was not as demanding as Um Qasr, despite the environmental conditions being worse. By this time the area had been fully secured, so force protection was less of a worry although travel outside the base area was still conducted in convoy with personnel fully armed. It was at the end of this task that the UMCM Task Unit started to go its separate ways. The remainder of NSCT 1 headed back on board, the Australians detached to conduct land EOD, and FDS prepared to roulement out of the Gulf having completed its MCM mission, to allow FDU 2 to come into theatre for land EOD. FDS moved down to Kuwait on 25 April and after a short delay started to head back to the UK as trooping and transport flights were prioritised. By the time the last member of the FDS returned to the UK they had spent exactly 101 days on operations.

This War in the Gulf was very different to the last one, fortunately the Iraqi's failed to exploit their potential to conduct a serious mining campaign. Possibly it was the initial coalition attack taking Iraq by surprise, or the apparent unwillingness to complete the mining operations by the Iraqi which brought this failure about is difficult to answer. Nevertheless the clearance diving teams of all nations did a fantastic job in completing what remained a difficult and hazardous task where other threats remained high. As an integral part of this the combined FDS team were the most dedicated and capable team anyone could have wished to work with, achieving every mission assigned to the highest of standards despite often having the odds stacked against them. This success, which resulted in the award of four Joint Force Commander's Commendations to CPO(D) Leader, PO(D) Marston, D1 Mathews and D1 Murray, was down to the calibre of those making up the team. Everyone involved worked tirelessly over the course of the 3 month deployment and this ensured it was a deployment from which all returned safely. It was an experience none will forget.

### Fleet Diving Squadron Nominal – Operation TELIC

Lt Cdr J A Herriman RN,
WO(D) K Barratt, CPO(D) P F Leader,
ACPO(D) A Seabrook,
CPOMEA N B Dilley,
PO(D) A E Knowles, PO(D) S T Marston,
POMA K J Lang, LD P E Holland,
LD M H Evered, LD I D Rigg,
LD W Peers, LD S S Lloyd,
LD A Lonsdale, D1 M J Jones,
D1 J J Hopkins, D1 R P Mathews,
D1 J E Craker, D1 J P Portelli,
D1 R C Murray, D1 S W Clark.

# Fleet Diving Unit 3

## No respite from operations

CPO(D) Paul Leader

Life on Fleet Diving Unit 3 has been intensely busy. Since joining in May 2002 the Unit has been constantly involved in Operational tours of duty at both individual and team level. It was never going to be an easy draft, you know that when you join as the Chief, on the same day as the new Boss ( Lt John Herriman), and there are team members with busted teeth, black eyes and a broken elbow, and the invariable divers friend " The Reggie" on case liaison visits. There was also the fact that we were required to enhance the team's presence on Operation ORACLE on the following Friday, joining them in Dubai. Leaving one element there ( 'The Insiders' - more about them later), with the other element carrying on to Salalah, Oman to relieve CPO(D) "Used-to-be" Thompson, and the rest of his team. They had been sent on the standard RN 'One Week Mission' and needless to say they where very grateful when we turned up two and a half months later. Thomo, received his nick-name because we had arrived after a major hurricane and all we got was, "There used to be a road / house/ river / bar here".

From April 2002 until August 2002, the unit was on active service committed to Op ORACLE providing Underwater Force Protection (UWFP) in the Gulf. The team was divided into two separate diving elements, one covering Dubai, UAE and the other providing support in Salalah ,Oman. It was an important task, that is still ongoing and despite not being the most demanding of diving and EOD tasks, it provided opportunities to work in an operational theatre, as well as acclimatising the team for conditions in the Gulf region. There were also other opportunities for outside work, albeit mainly in the more liberal Dubai rather than Oman. 'The Insiders' were able to take advantage of the night life in the very Westernised city and to undertake adventurous training ranging from off-road driving and camel trekking to Go-Karting and visits to the local Water Park. There was also the opportunity for one member of the team to enjoy a new class of air travel - the " one high club", plus Dvr1 John ( Operational bride ) Hopkins to bring back the lady of his dreams.

The Oman lot were short of live entertainment and not helped by the fact that I was required to stay on the wagon for continuous IEDD/EOD duties, but LS(D) Steve ( I hate scout leaders) Meddoms and Dvr1 John ( Have you seen my phone bill, my Wife has! ) Hobbs also joined me. We in Salalah managed the biggest change round in personnel, with PO(D) Russ ( I am on the Atkins Diet) Russell, LS(D) Meddoms, LS(D) Bruno ( I am a scout leader) Searle, Dvr1 Glen ( Cooked Breakfast) Holgate leaving for home and being replaced by PO(D) Sid ( Dancing) Seabrook, LS(D) Mike ( Taxi Driver ) Evered and Dvr1 Richie Mathews. It was not all desert and camels, we did take a weekend trip to get a Mickey- Dees breakfast, no-body ever questioned the 2000 km round trip. The deployment itself lasted 4 months and was spent searching the hulls of warships and RFAs every day to ensure that there was always an active deterrent to terrorists. It was also important to make sure ships were aware of the reality of the threat that existed and the precautions they should be taking. On at least one occasion ships were forced to sail because of intelligence suggesting an increase in the likelihood of an attack, and this along with other finds indicating that organisations such as Al Queeda may possess attack swimming equipment justifies why this task was necessary. FDU 3 has continued to commit personnel to Op ORACLE on and off since then and currently has a PO(D) permanently assigned to running UWFP in the Gulf region.

After returning to the UK from the Gulf in August 2002, there was a short respite for Summer Leave before the whole Unit was to deploy for its next task, Operation UPRAISE, live EOD range clearance in Cyprus. This operation has been ongoing for the last 20 years. FDU 3, supported by augmented personnel from other diving units and MCMVs, took the opportunity to take the POMA Doc ( You divers drink like pussies) Lang and CPO(MEA) Nige ( Have you seen my Landrover) Dilly and conducted this mission both in 2002 and also again in Sep 2003, when it had the privilege of finally the completing the whole task. In 2002 there were 46 live 4.5 inch shells found and disposed of and in 2003 over 400 items were found, 106 of which were live

and subsequently stockpiled and explosively removed. Importantly, as a result of this success HQ British Forces Cyprus can now hand back to the Republic of Cyprus the maritime range area cleared by the teams. In 2002 the deployment was based in a campsite in Polis. This worked well and was an improvement over previous years. The team was working very well together and over come the bee stings and drunken chefs. It was looking like this was the direction for future deployments, until the Boss was approached as he left the toilet block by a gentleman in a very tight pair of swimming trunks and asked if he would like a "date"! We worked from Army Landing Craft, embarking and disembarking from the packed local beach, often to the bemusement of the local holidaymakers. In 2003 they worked from the same Landing Craft but were accommodated in hotels on the outskirts of Paphos. Both were work-hard, play-hard deployments, often with 12-14 hours times on task. However, weekends were free and this gave opportunities for some R&R including wreck diving on the Xenobia with local diving clubs, more Go-Karting, and even more time for taking in the local nightlife as the holiday season came to a close.

Whilst these deployment themselves would have made for an exciting time FDU 3 was selected, because of its commitment to JRRF, to lead the Fleet Diving Squadron wartime deployment for Operation TELIC in Iraq. This deserves a little more detail and has been covered in a separate article, hopefully in this MAD Magazine. I must add my lasting memories, which I feel sure the Boss will not mention, which include Dvr1 Mathew Jones running around naked in the middle of a chemical attack warning wearing just his Gas Mask and another incident with Dvr1 John Hopkins, again under another chemical attack warning, standing in front of me apologising for mis- placing his Gas mask. I had other things to think about, but I held on tight to my own mask while telling him to get into a LEBA set. Suffice to say here that it was a professionally challenging, rewarding and very fulfilling task, testing team capabilities to the utmost in an operational environment. For many of the unit it was the first exposure to hostilities in a Clearance Diving Team and conducting EOD and MCM diving alongside US and Australian Clearance Diving Teams meant everyone was doing everything they had trained so long and hard to. The success of the deployment was measured in the positive way FDU 3, along with personnel from FDU 2 and SDU 2, were received at all levels, showing exactly what UK Clearance Diving Teams can do under even the most testing of conditions. Most importantly of all however, was the fact that no one got hurt, despite the hazardous nature of the work all were required to do. But it will take a considerable amount of time before my pride recovers from the embarrassment of walking around a complete Commando Brigade trying to beg transport to allow us to be pro-active and completely employable in a theatre of war. Future Commanding Officers please note.

For all those back from the Gulf there was some well deserved leave before a summer Weapon Training period conducting a diving work-up living in Falmouth and working from the MV Colonel Templar. This work-up was utilised to keep the training levels up for LEBA, the set now used for harbour clearance operations, and to work up to 50m on SSDE to ensure that this capability is always available for immediate deployment. More recently FDU 3 has participated in the Joint Maritime Course 033 in Loch Ewe, West Coast of Scotland, and this has been crucial because it has enabled the team to incorporate lessons learned from Op TELIC, to make it more capable for any future operational clearance diving tasks. Operating alongside other units, living under Spartan and often uncomfortable conditions is not always the most pleasant way to spend two weeks, but this is exactly how wartime operations are conducted and which the unit will now always train operate in. Basic infantry skills to allow dive teams to protect themselves, operating in a tactical environment and knowing how to survive with the minimum levels of support are now becoming a way of life and are balanced against the sunnier times in Cyprus and Dubai. On JMC the team also tested its procedures for Mine Investigation.

There has also been a major up grade of the Unit roles and capabilities. Once known solely as the Trials Team, this is no longer the case and it is now a fully integral part of the Joint Rapid Reaction Force (JRRF), classed as R2 (5 days notice to deploy) and rotates this responsibility with FDU 2. Statistics over the last year, 9 months out of 12 spent on operational duty from April 2002-2003, show that if you want the time away and your LSSA bonus FDU 3 is the place to be.

The teams main roles are now to sustain the Fleet Deep Diving capability (and was the only unit with dispensation to dive CDBA whilst it was officially out of service ), Mine Investigation tasking, worldwide maritime and land EOD, EOD support for salvage operations, post assault MCT support, trials of equipment specific to FDU 3 roles and maintenance of a surface supplied diving capability in support of

Fleet operations worldwide. The responsibilities are diverse and varied and make it a highly demanding job for the fourteen personnel on the team. Extensive travel is guaranteed, often at short notice, and the pace of team life is fast and furious. This is not the place to be if you want to be able to plan your life for months ahead, it just doesn't happen as an operational clearance diving team in the current World climate.

Looking ahead, FDU 3 has been given the responsibility to trial the CDBA MOD 1, which will mean the unit is the first to regain the 81m capabilities and at the same time contributing to the future development of the Branch as a whole. It is a responsibility taken very seriously to ensure we get the best possible set appropriate to the MCM diving requirements. Final arrangements for the trial are underway and it will commence in New Year 2004, with CPO(D) Sid Seabrook and CPO(Desig) (Brown nose) running the trial for approximately 4 ½ months. This will involve creating and developing new SOPs, testing equipment reliability and getting ready to provide the Fleet with its full Deep Water Warfare capability, which is after all the remit of FDU 3. It will be good to focus on being deep MCM diving specialists again and will, when coupled with the operational experience it now possesses, make the Unit into an even more effective clearance diving team that will be hard to beat.

There have been a lot of changes in FDU 3, most of which people are now aware. The team has been at the forefront of all that has happened in the FDG over the last year and a half, not least leading the wartime deployment to Iraq. The team has focussed on the core clearance diving skills, those that are most likely to be demanded in any future operations, wherever they may be. It also has the added advantage of a full and specialised EOD capability, one which no other unit possesses and which means it can fulfil this task in addition to any other EOD operations. The future is going to remain busy, with no let up in pace, but the rewards are in the work the team does and where they do it, which is clearance diving and EOD anywhere in the world, at anytime.

I wish to take this opportunity to wish every body I have ever had the pleasure of knowing " Thank you" for the good & bad times, its been 29 years well spent with wonderful people, and unlike some parts of this article there's no sarcastic humour meant.

# Op TELIC MCM

## A Personal View from the Battlestaff

**The United Kingdom Maritime Component Commander's Staff, Bahrain**

Lt Cdr Dave Hunkin RN

### Introduction

For me the war was practically over before it began. On the evening of the first assault the United Kingdom Maritime Component Commander's (UKMCC) Headquarters in Bahrain was surprisingly quiet. With an air of inevitability we watched BBC News 24 and CNN and monitored the various command chat rooms knowing that it was now up to the 'boys on the ground'. Our months of planning were about to be executed and, whilst we still carried out contingency planning, we largely monitored the various formations as they undertook the first offensive actions.

The UK Maritime Battlestaff, of which I was the Staff MCDO, had kept a permanent presence in the US Fifth Fleet HQ in Bahrain since October 2001 when Rear Admiral James Burnell-Nugent became the Deputy Coalition Joint Force Maritime Component Commander (DCJFMCC) for Operation ENDURING FREEDOM.

I had just returned from a recce to Japan when our Chief of Staff called me into his office. He told me that I was off to Bahrain to conduct contingency planning with the COMFIFTHFLT's MCM staff. It was one of those classic "..... for as long as it takes" assignments that our families love! At this stage the UK had made no commitment to any operation in Iraq but US planning was gathering momentum. It was clear that MCM was going to be a key enabler in the early stages of the campaign and that *if* we were going to take part, we had to be involved in the planning.

### Initial Planning

During the initial planning phase a strict 'need to know' principle was enforced. Whilst I had experienced the demands of OPSEC in previous operations, this level of security was unsurpassed and so began a difficult and often frustrating phase. We are taught that successful planning is an inclusive process and that planning in isolation is fraught with danger but on this occasion we were given no choice. There were only a handful of people back in UK that were cleared to discuss the contingency plan but fortunately for me, our contact at the Maritime Warfare Centre (MWC) was its Deputy Director, Cdr Dougie Macdonald a fellow MCD. Cdr Macdonald and I then began a long distance Command Estimate. Important initial questions surrounded the On Call MCM Force, OCF 32, lead by Cdr Charlie Wilson, Cdr MCM 1. They were exercising in the Mediterranean but if they

were sent through Suez, were there enough hulls and was the force mix of 1 Hunt and 3 Sandowns satisfactory? It was intensely frustrating talking about Force Generation without being able to talk to the 'Force Generators' but I grabbed what guidance I could from the MWC and the small team at PJHQ.

Having not previously worked with the American MCM community I had to establish what their capability was, what their plan was and how we could contribute to it. I spent as much time as I could with MCM DIV 31, the resident 5th Fleet US MCM Command and soon discovered that they approached MCM in quite a different way to the UK. That said, Cdre Kenny Williams USN, COMMCMDIV31, and his team made me very welcome and soon offered me a desk in their cramped offices so that our planning was 'joined up'. I visited the ships, spoke to the COs and ships teams trying to build a picture of their capability and how they intended to employ their various techniques. It became clear that the UK could make a major contribution to the planned MCM effort both in terms of hulls and expertise. In fact, to the best of my knowledge, there was no other Line of Operation where the UK could offer such a significant contribution relative to the US capability.

Our mission was to open the Khawr Ab d'allah (KAA) waterway and Port of Umm Qasr (UQ). A port of strategic importance, the early opening of this gateway was vital to the supply of Humanitarian Assistance (HA) to the beleaguered people of Iraq. The coalition posture was one of liberation not invasion but without HA quickly following the combat formations, it would be a very difficult message to sell.

There were several key areas of discussion regarding the initial American plan largely appertaining to the efficacy of minehunting in the KAA and the absence of friendly troops protecting the eastern bank of the KAA on the Al Faw Peninsula. With US forces at full stretch covering more important tasks, it had been decided that the Al Faw threat was to be taken on risk with the MCMVs using self-protection and air cover. Exercising with OCF32 in the Mediterranean had been our Amphibious Ready Group lead by HMS OCEAN having just completed Exercise DESTINED GLORY 02. Royal Marines were the obvious choice to provide the MCMVs with flank protection ashore and so began an intense period of planning as the 'Booties' were brought into the 'inner sanctum' to start planning this now potentially amphibious MCM operation. The MCM Commander was to be the Supported Commander with the Royal Marines a Supporting Commander protecting their land flank.

Command and Control (C2) was to become another key area of discussion. For months, C2 of the Al Faw Peninsula, the KAA and UQ became an area of intense staff activity as Amphibious Doctrine battled with Land Doctrine which battled with Maritime Doctrine and occasionally, even 'Bespoke Doctrine'! Finally the Component Commanders found a solution but inter-component liaison was to become a difficult area during the subsequent operation.

Planning gathered pace as the US, supported by Britain, mounted increasing diplomatic pressure on the UN for a tougher stance against Saddam Hussein. Worryingly short timelines for the operation were being discussed in some circles but without any formal commitment by the UK, our planning team remained very small and very constrained. CINCFLEET decided that OCF32 should be brought through Suez as a contingency mindful of their slow transit speed and their inevitable requirement to conduct maintenance and training on arrival in the Gulf. This potential pre-positioning was to be key to our preparedness for the operation. Coming through Suez was not however the green light for me to engage Cdr Charlie Wilson in the planning process. It was not until the ships reached Salalah that I was authorised to brief him and his SOO, Lt Cdr Alex Bush. I felt a huge sense of relief as I was finally able to discuss the plan with the team that would probably execute it and we spent the day talking through the various issues. At last there were more MCDs looking at the plan, checking and double-checking that weeks of isolation hadn't resulted in a complete work of fiction. There was still much to do however and now Alex and Cdr Wilson became actively involved in direct discussions with MCM DIV31 and the Royal Marines as the ships made passage to the Gulf.

## A Shift in Effort

Just before Christmas the Main Effort(ME) of our operation shifted. No longer was opening UQ our ME and no longer was the MCM Cdr going to be the Supported Commander. It had been realised that oil was going to be the key to Iraq's recovery. Iraq's oil industry needed to remain intact so that it could restart production and start earning badly needed revenue for the country as soon as possible. We knew of Saddam's previous 'scorched earth policy' and if allowed to happen again, it would not only have a massive impact on our operation but post war recovery would be far more difficult. Saddam had rigged much of the oil infrastructure with explosives and he intended to

destroy the various sites as soon as the coalition attacked. The other fundamental change to the plan was that any preparation of the battlespace could now not take place. Bombing from the air or sea bombardment before any attack would destroy the element of surprise and the oil infrastructure would go up in flames. Our troops therefore would be attacking a well-trained, well-entrenched enemy having had none of the traditional 'softening measures' that doctrine dictates. Our plan had to change significantly.

Planning continued a pace and in January the US MCM CTG Staff was augmented by Cdr Brian Mair, Lt Cdr Don Crosbie and CPO(MW) Taff Hembrow. They then assumed the Operational MCM planning function allowing Cdr Wilson to concentrate on tactical business and me to shift to staffing other issues within the MCC.

## Risk

Some final observations: MCM is a unique warfare discipline in many ways and none more so than the way we offer our Operational Commanders a quantitative and qualitative assessment of risk to our forces and allow him Tactical Control of our exposure to it. Despite all our computer prediction tools and wizardry however, the level of risk that we are willing to accept remains a highly personal and often emotive subject.

It was obvious that Operation IRAQI FREEDOM would not be conducted in the same manner as Operation DESERT STORM. Put simply; call it invasion or liberation, we were not there by invitation, at least not openly. Our tactics were therefore going to be more robust than we had used in recent operations and the level of risk that our troops were going to be exposed to was going to be correspondingly higher. The Iraqi Army outnumbered the initial coalition force by a factor of 6:1. Couple this with the reported threat of unconventional weapons and the ever-present terrorist threat and one can see that this operation was never going to be easy or straightforward.

Having completed the estimate with the MWC and subsequently with MCM2, it was agreed that we should not shirk from telling our Commanders that the mission to clear the KAA and UQ would not be without significant risk to our MCM forces from many different threats. We assumed that pressure to open UQ and get HA flowing would increase as the operation progressed and that we would probably not have the luxury of a blank calendar in which to complete the task. Fortunately our Commanders had already accepted some very unpalatable realities from the Land Component Commander and so when it came to discuss MCM risk, peacetime considerations had long been discarded. That was not to say that we were throwing caution to the wind but we had to be realistic and we had to expose the issues thoroughly and early in the planning process so that when the time came, MCM Risk was well understood.

In terms of expressing or controlling risk however, not all in the UK/US MCM community could agree. One thing we were all agreed on however was minimising risk to our forces. The Directive and Directive Profile was the key issue, Alpha or Bravo? Was Directive Alpha the right directive to achieve the mission as we had done during Op GRANBY? Was timely completion of the task of secondary importance as stated in the Directive Alpha or was it going to be pivotal to mission success? Following much discussion, it was decided to conduct the mission in a Directive Alpha Profile and in the final event, despite the window for the operation shrinking from 9 days to 72 hours, the MCMV led operation was successfully conducted in this profile. The CDTs in UQ however shifted to Directive Bravo Profile quite early on. So it was a success for the management of Directives, although it could be argued that there was a blurring of the boundaries between Alpha and Bravo. Therefore a review of the doctrine as it currently stands might be warranted.

There may also be something to be gained from a review of how the Directive Profile process works. A good liaison between the Operational Commander and Tactical Commander is essential to ensure that specified objectives can be achieved. A distinction between exercise and operational objectives must be maintained.

## In Conclusion

On reflection I was extremely lucky to be in the right place at the right time and my 6 months in Bahrain were the most rewarding of any during my time with the Staff. If CINCFLEET ever wanted a practical example of his strap line "The Team Works" this was it. Once all the necessary parties were engaged, in particular Cdr Chris Lade and Lt Cdr Dave Bence at FLEET N7(MW), Cdr Peter Greenwood at DNO and our friends at Bincleaves and DEODs, it all came together. We had MCD representation in the right places by the right people and once we were allowed to, we all talked and things really started to happen. I'll let others outline their far more interesting 'Warry stuff' but from a personal Battlestaff perspective in Bahrain, I believe the team most definitely worked.

# The Development, Training and Operation of A SHALLOW WATER INFLUENCE MINESWEEPING SYSTEM for use in Operation TELIC

Lt Cdr Mike Leaney RN MBE

## Background

In November 2002 MW TD and OA staff at MWC (Portsdown) were briefed on a potential capability shortfall in the area of Mine Countermeasures. This involved mine clearance in shallow water with high tidal streams, poor underwater visibility and very limited room for ships to manoeuvre. Analysis of the probable mine threat and an assessment of the predicted environmental conditions indicated that a small minesweeping system could offer a solution. This conclusion was based on depth and manoeuvring limitations ruling out CIS, and poor visibility and high tidal streams making mine identification and neutralisation difficult with RCMDS vehicles. QinetiQ were tasked to assist Maritime Warfare Centre (MWC) in the identification of a suitable influence minesweeping system. Commercial off-the-shelf systems were assessed, as well as systems already in service with other navies. A table of sweeping systems were drawn up and scored on a variety of criteria such as effectiveness against the perceived threat, manoeuvrability and availability.

## Sweep System

The Australian Defence Industries (ADI) Mini Dyad System (MDS) with Pipe Noise Makers (PNM) became a clear front-runner due to their manoeuvrability, simplicity and portability. It was quickly established that a number of systems were available for lease at short notice from ADI and that they could be transported directly to the vicinity of operations. A pair of MDS were obtained from RNAS CULDROSE where, fortuitously, they were being used to check Magnetic Anomaly Detection systems. These were requisitioned, transported to QinetiQ's Bincleaves Site and used in a series of trials and evaluations. In order to assess both the acoustic and magnetic performance, PNM's were locally manufactured.

## Towing Vessel

The selection of a suitable towing platforms were narrowed down to in-service diesel RHIBS or the Army Combat Support Boat (CSB). Given that the CSB was designed for towing and bridging operations it seemed the logical choice, especially as it used water-jet propulsers instead of propellers. A CSB, complete with coxswain, was made available from Weymouth Bridging Camp, a local TA establishment, and used for trials and evaluation. These trials showed that the CSB had a low acoustic and magnetic signature (of the same order or slightly less than a Hunt Class in SSD) and also had the power to tow the sweep at the required speed of 5-7kts. The MCM IPT identified 12 CSBs that could be made available if required.

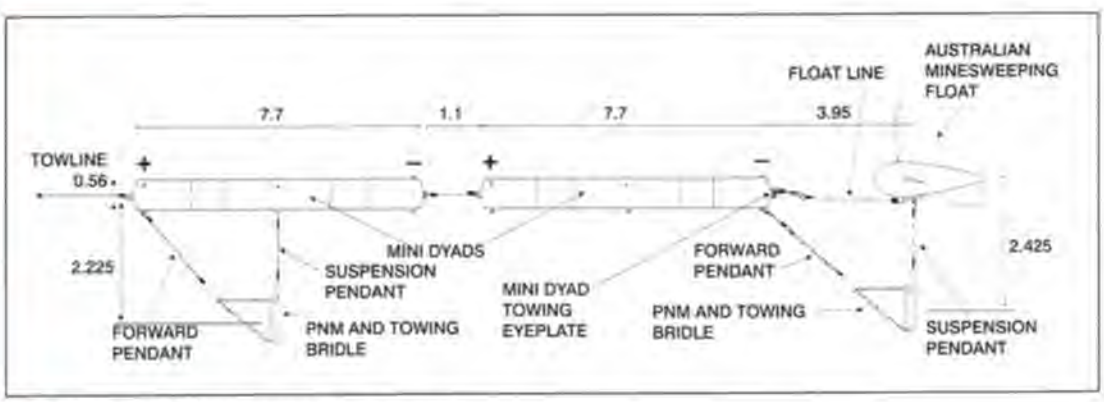



Fig 1. MDS and PNM in the configuration used

Fig 2. Combat Support Vessel

Fig 3. Trials at Portland

## Remote Control System

QinetiQ Winfrith had been working on a remote controlled system for sensor delivery and they were approached to consider applying their system to the CSB. An initial assessment was positive and the task was scoped. At this point the funding provided by MWC was running dry and Directorate of Equipment Capability (DEC) were approached. The system was taken up as UOR 41, although not before a three-week delay due to funding difficulties for a financial risk assessment study.

## Mine Threat

The Iraqi mine ORBAT was carefully considered and, given the environmental constraints, both influence and contact mines were considered as viable.

Trials focused on the influence mines, as the sweep would have a very narrow swept width against the contact mines, and then only once!

## Trials

A comprehensive series of trials were undertaken using the CSB as the towing vessel with 2 MDS with 2 PNM. Noise and magnetic ranging tests showed that the sweep generated a suitable acoustic and magnetic influence and confirmed that the CSB, given a suitable tow length, had a reasonable chance of passing over the threat mines without causing an actuation. The system was then trialled against various VEMS emulations. Results were very encouraging and, in summary, would have a worst-case Characteristic Actuation Width (A) in the region of 50m with a Probability of Actuation (B) better than 0.9. The sweep configuration chosen offered a compromise between portability, manoeuvrability and performance and because of reasonable confidence in the mine threat was able to operate in an efficient mine-setting mode (MSM). The system flexibility is such that by varying numbers and configurations of both MDS and PNM, a target setting mode (TSM) was feasible. Given the likely nature of the operation, it was planned to use SWIMS as a precursor sweep ahead of the lead minehunter in order to reduce risk to the following MCMVs. Total Mine Simulation System (TMSS) was widely used to extrapolate performance in a variety of configurations and environments and was crucial for tactical development. TMSS predictions were close to the values obtained in trials. A side-scan sonar capability was trialled using in-service equipment (Octopus) from a CSB and good results obtained.

## Personnel

CINCFLEET Portsmouth nominated a team to undertake trials, gain experience with the system and ultimately operate it in-theatre. Personnel were drawn from MWC, the Fleet Exercise Mining Team, MCM IPT and MCM 3 making up a team of 8 people. The training programme was highly compressed, consisting of trials work at QinetiQ Bincleaves, a CSB course run by the Royal Engineers and training on the operation and defect rectification of the remote control system. Having gathered for the first time at Bincleaves on 7 Jan 03, the Unit deployed to Bahrain on 3 Feb 03.

## Deployment

Following a very intensive period of trials, training and tactical development the system and components were deployed to Bahrain under the command of MCM One. The SWIMS Unit arrived in Bahrain on 3 Feb and was backed up by team from QinetiQ in order to fit and configure the remote control system and set it to work. Due to a series of logistical failures, the assembly of the system in-theatre and setting to work was significantly delayed and missed the operational date of 15 Feb 03 but was ready in time to participate in two rehearsal exercises (FAWOMO 1 and 2).

## Rehearsals

SWIMS equipment (5 CSBs and 6 pairs of sweeps) and personnel embarked in RFA SIR BEDIVERE and sailed for rehearsals. The geometry of the KAA route was 'transposed' to the NAG and the MCM assets deployed to conduct exploratory operations. SWIMS personnel embarked in HMS SANDOWN and operated 2 remote CSBs and sweeps with a manned CSB as a back up. Significant problems were encountered due to bad weather. Personnel

Fig 4. WO Mills and the SWIMS remote control station in HMS BROCKLEHURST

transfers between CSBs and HMS SANDOWN were hazardous and sweep linkages failed due snatching in the sea state. The CSBs were anchored with the sweeps attached while the weather improved. As the weather improved, system failures were rectified and personnel transferred to HMS BROCKLESBY to continue minesweeping operations. The tactic utilised was precursor influence minesweeping ahead of the lead minehunter in order to reduce risk to the MCMVs. In the operation, MCMVs would be operating in very shallow water and more vulnerable to influence mines than usual. Using 2 remote systems, 5 tracks with 30m-track spacing were swept to allow the initial minehunting effort to be conducted in a 120m swept corridor. Considerable help was provided by UK MCC COMCEN in working around frequency interference problems in the area of operations.

## Operation TELIC

On March 23, SWIMS personnel and equipment were deployed with HMS BROCKLESBY to clear the Khor Abd Allah (KAA) waterway of mines prior to shipping using the port of Umm Qasr for humanitarian aid distribution. SWIMS were controlled from the lead MCMV and conducted a pre-cursor sweep to reduce risk to the following vessels. A track spacing of 30m was adopted with 5 tracks being run. This cleared a central channel from which the MCMVs could operate and expand the effort. Ranges of up to 9000m were regularly achieved, and the rate of progress of the sweeping operation was significantly faster than the minehunters dealing with poor conditions and numerous sonar contacts. It is not thought that the sweep was responsible for any mine actuations, although at the ranges involved and during darkness this cannot be confirmed. Intelligence indicated that a mix of Manta and LUGM contact mines were laid.

The precursor minesweeping effort reached Umm Qasr on PM 24 Mar and loitered at point L whilst awaiting clearance required due to EOD operations. During this pause, a severe squall with winds up to 60kts caused damage to 3 CSBs. SIR GALAHAD was led up to Umm Qasr by HMS SANDOWN and docked alongside on 28 March. Records taken during the operation have been analysed. In summary, a corridor of up to120m was swept over a length of 27.7nm (point C to M) over a period of 23 hours 50 minutes.

SWIMS reliability was generally good although problems were experienced with MDS tow and linkages and a tendency for the CSB engines to overheat at low power settings. The system is very weather dependant and not suited to blue water operations in TSM. The remote control system needs continued development to aid navigation, collision avoidance and provide a video link for confined waters.

There followed a period of consolidation, relocation of equipment and maintenance before the SWIMS Unit returned to RFA SIR BEDIVERE. The Unit remained at short notice to respond to additional tasking until returning to the UK on 10 April. The equipment remained at Bahrain with personnel at 3 days notice to move until 28 April when the decision was taken to return equipment back to the UK.

## Conclusions.

(1) A capability gap clearly exists in the area of very shallow water (VSW) MCM. This lack of capability is exacerbated by conditions

that are commonly associated with the VSW environment such as high tidal streams, poor underwater visibility, mine burial in soft substrates and challenging sonar conditions.

(2) In this type of environment, minesweeping offers advantages over minehunting and is a viable tactic, especially if the system can be operated remotely and substantially reduce risk to personnel. Remote minesweeping need not be limited to MSM, but could be easily configured for TSM using SWIMS or possibly increasing performance using Maxi Dyads and extending capability into deeper waters. Lightweight mechanical sweeps fitted to a remote controlled CSB would offer some capability against buoyant mines although these are not always the mine of choice in VSW. The side-scan sonar capability already trialled and demonstrated with the remote controlled CSB can also offer a precursor capability, or a check system on completion of sweeping. In addition, if a minehunter holds a sonar contact but cannot identify due to conditions being out of limits for RCMDS or OSMDS, a series of runs on top by SWIMS could elicit a high order event confirming the presence of mining.

(3) The tactics adopted during the rehearsals and Op TELIC, precursor minesweeping ahead of the minehunters, did not impede progress as the sweeping SOA in this case was significantly greater than the minehunting SOA. Detailed analysis will provide more data and allow fine tuning of tactics.

(4) The system was generally reliable although there is room for improvement. Specifically, the MDS tow and linkage arrangements need review and the tendency for the CSB engines to overheat at low RPM needs investigation. The remote control system should also display host and other CSB positions to aid collision avoidance. For consideration is integration with a Radar output, video linkage and additional indications of CSB status. The frequencies for remote control need to be researched carefully in order to avoid range limitations due to interference and costly last minute frequency alterations.

## Summary

Having demonstrated a low cost remote minesweeping capability, developed to a very tight schedule, that goes some way to plugging a capability gap, a decision will need to be made as to how critical this capability shortfall is and how this gap can be closed in the future. SWIMS has great potential for improvement at relatively low cost and could provide a way ahead.

# SHIPS DIVER CONTINUATION TRAINING

## FOST SUPPORT

Since May 2003, FOST has been uplifted by a CPO(D) giving the capability for FOST to conduct Continuation Training (CT), including Mobile CT, in all major surface vessels whether in UK ports or deployed.

With the implementation of the Military Diving Safety Management System (MDSMS) and the greater emphasis on diver safety in the community at large; ships preparing for a period at OST will therefore be under greater scrutiny by the Diving Standards Team and FOST. As part of a holistic approach to preparing for OST, support can be requested from FOST Commander Mobile Sea Training (CMST) for a period of Diving CT; RNTM 52/02 refers. This diving CT package will normally last 2 days and consist of a Diving Documentation and Equipment Check (DDEC), followed by teach-ins and a series of training dives including mandatory emergency procedures. However, Diving CT can be tailored to the needs, particular requirements or availability of the requesting unit and may take the form of an advisory visit or "health-check". Ships that have recently taken advantage of this service have gained much administrative and training value from the FOST Diving Staff visits.

### Common Shortcomings

Below is a representative, though not exhaustive, list of common shortcomings identified during Diving Standards Checks (DSC) and OST:

| Weakness | Solution |
|---|---|
| Teams undermanned, lacking Supervisors and/ or sufficient personnel to man a team. | Raise OPDEF personnel, identify personnel early and release for course, liaise closely with DDS. |
| Shortfalls highlighted by pre-OST DSC not actioned on arrival at OST. | DSC or CT should be requested allowing sufficient time for shortfalls to be rectified. |
| Poor dissemination of DSM's, signals and temporary diving instructions. | Complete current instructions should be available in the reading file held in the diving store. |
| Lazy shot and shot ropes not made up. | Locally manafacture iaw BR2806 art. 09940947. |
| Light lines poorly or incorrectly marked. | Locally manafacture iaw BR2806 art. 0753. |
| Lost Diver Markers without 5m distance Line. | Locally added iaw BR2806 art. 0927 para.e. |
| No lifelines made up for tidal diving. | Locally produce 3 lines iaw BR2806 art. 0744. |
| Divers knives rusty, lanyards missing. | Cleaned and greased (synthetic grease) post dive, suitable lanyards and belt knife extensions used. |
| Impratical limpet mine markers. | Manfacture limpet mine markers iaw BR8988 art. 2455. |
| Awareness of repetetive and combined dive regulations in particular when using the standby diver. | Thoroughly understand BR2806 Ch. 12 art. 1207 and 1209. |
| Diving teams poorly manned with support Personnel and unqualified attendants. | Ensure diving is a whole-ship activity, locally train unqualified attendants to support diving. |
| AMBU resuscitator in poor condition. | Close supervision of medical staff. |
| Incorrect MMS held for diving and ancillary equipment | Raise S2012's as appropriate. |

Requests for Diving CT visits should be made iaw RNTM 52/02 "Delivery of Operational Training to the SURFLOT". Point of contacts at FOST Devonport are:

Lt Cdr G Wilson MBE RN
SMCDO to FOST
CPO(D) S Strange
SCPOD to FOST
Grenville Building
HMS DRAKE
Plymouth
PL2 3BG
Tel. Civ. 01752 67784
Tel. Mil. 9375 65604

# WHAT NOW

## FOR THE SHIPS DIVER?

Cdr Martin Doolan RN
SO1 UWW MWC Southwick

The future of the Ships Diver (SD) is a subject, which historically has been the source of many debates. The results of which have examined options from one side of the spectrum to the other. It varies from what I believe is the negative side of the argument, that of scrapping the SD Capability altogether in a bid to save money, to the positive one of retaining the current capability. What is a common thread to all these arguments is the aspect of safety which should always be our top priority, especially considering the number of fatalities in the diving fraternity over the last few years which must be considered as unacceptable. Therefore any review of the future of the SD should have safety as the top of the agenda.

Although a SD Supervisor myself I have attempted to look at both sides of the argument objectively and maintain an open mind. I consider the argument for scrapping the SD as a negative one quite simply because we would indeed be losing a significant capability in terms of maintenance and defect rectification alone. Lets face it the life of a SD is hardly a glamorous one; we are not like our Clearance Diver (CD) brothers who at times travel all over the country and sometimes the world to either defuse unexploded ordnance or take on the more demanding defect rectification work. No, our bread and butter is usually being deployed in ships around the world conducting work such as poker gauge readings or clearing the shaft from fishing lines in nil visibility and freezing temperatures. Quite rightly the differential in Special Service Pay (Diving) (SSP(D)) between the CD and SD reflects this gap in capability. However, I believe having this very capability itself defeats the argument of any cost savings by scrapping the SD. For if it not SD that are to conduct this type of routine maintenance and defect rectification, then who? I have often been called upon to conduct this type of work either alongside in foreign port or indeed on passage quite simply because our options, either due to the nature of the work or our location, have been severely restrictive. Therefore, what are the alternatives:

a. Have a team of CDs at immediate notice to fly around the world to conduct basic defect rectification and maintenance - hardly cost effective or efficient use of their capability.

b. Civilian contract divers in a foreign port - can prove costly and time intensive reducing the flexibility of the ships programme.

c. Tow a DD/FF into harbour with a civilian salvage vessel then revert to either option a or b.

I would submit that any of the above options are not cost effective and in the case of the CD option a waste of a very important asset.

So if we are not to accept any of these options, or something similar, as a viable alternative to scrapping the SD then it stands to reason that the argument to retain the SD capability must hold water. However, if this is the case then the very fact that the future of the SD has been the source of such debate leads me to suggest that what must be accepted is the view that all is not well in the current life of the SD.

One of the strongest arguments against the retention of the SD is that they are too expensive to train given the limited capability that they provide. Whilst I agree to a certain extent I would counter this by first of all submitting that SD provide an essential capability which justifies the cost. Secondly, and perhaps more importantly, I would ask the question why we are training so many SDs?

Figures vary depending on the number of courses achieved in a 12 month period by the Defence Dive School (DDS), but as an average 80-100 SDs and 40-50 SD Supervisors qualify each year. For the sake of argument, let's take an approximate total figure of 135 per year. If we then take a 10 year period as a snap shot of current numbers then we obviously have 1,350 SDs. If we then assume an annual loss rate to personnel leaving the service for whatever reason of say 10% then we end up with a total figure of 1215 qualified SDs currently available

to the Fleet. However at the time of researching this article (Feb 2003) AFPAA Centurion were only paying SSP(D) to a total of 586 SDs which leaves us with a deficit of 629 qualified SDs. We therefore have more qualified SDs who are not currently diving than those who are. This must be considered unacceptable and leads us to the question - Where are they?

Unfortunately I think it is pretty sad to discover that in this day an age of information technology there is absolutely no database whatsoever to monitor the current figure of qualified SDs in the RN. How many are qualified and in date? How many are qualified but out of date? How many are medically downgraded? How many have left the service? How many quite simply just do not want to dive anymore? These are basic questions which I consider would be essential to anyone analysing the future of SDs in the Royal Navy (RN) and yet there is currently no organisation within the RN's diving community that is able to provide this data. If we are serious about moving ahead with diving training and increasing the level of safety, then I would consider that these figures should be at our fingertips.

Assuming that the missing 629 SDs are still serving members of the RN, then the conclusion must be drawn that whilst qualified, the majority have probably failed to complete their required diving minutes for the quarter and are simply out of date for diving. By the very fact that there are more qualified divers out of date than in date for diving, I conclude that there must be a problem with the way in which we conduct our Continuation Training (CT) in the RN. Having qualified as a Ships Diver in 1986 this is a view I have held for some time.

If we take this opportunity to compare similar capabilities then let us compare the SD to the Aircraft Controller (AC). In a DD/FF both will probably be junior rates and although they provide different individual capabilities the overall Operational Capability (OC) of the ship will at some stage be dependent on them both. However, it is a notable difference that when an AC joins his ship his Annual Standards Check (ASC) will be programmed into the ships long cast - after all this is not just OC we are taking into account here, but also the safety of the aircrew. Not only is the ASC planned but during the check significant care is taken over assessing his/her current performance and level of safety. However, in comparison the SD will generally be left to his own individual devices to organise his own CT which becomes increasingly more difficult with the demands we place on our ships' programmes and their manpower (eg. OP FRESCO). Even when he/she does complete the required minutes there is no equivalent assessment of performance or safety standards. So why should the SD be treated in such an unprofessional manner? A manner which could lead to the reduction in the level of safety standards if CT is not achieved to a satisfactory level.

On a slightly different tack once qualified, diving OC starts to drop just as surely as a ships OC starts to drop after its final inspection at OST. Only by achieving minutes and keeping up to date with documents such as the relevant DCIs and Diving Safety Memoranda will a SD truly maintain his OC. Yet how many Ships Divers could honestly say they have had sight of all such documents that effect the safety of ships diving within the last 12 months? I for one could not, although quite obviously I should have. However, as we move around from ship to ship and country to country, is it any surprise that some will inevitably slip through the net. Surely this is not the professional way we should be conducting our business and certainly not the way we will keep the safety aspect at the top of all our agendas.

Therefore, I have a recommendation and suggestion. The recommendation is not to scrap SDs but to continue utilising their current capability for the reasons I have already explained. The suggestion, is to change the way in which we conduct our SD CT which would rely on three elements:

1. Don't leave the planning and organisation of CT up to the individual - the historical data given above proves that it does not work, and with the fall out rate it is obviously costing too much money. CT should be monitored, planned, organised and assessed by a central agency - perhaps a dedicated Warrant Officer with the figures suggested above as his basis and a remit to ensure all qualified divers remain in date. How simple would it be to install a computer terminal in Devonport, Portsmouth and Faslane to allow divers to input their minutes on completion of diving. In this way progress could then be monitored throughout the quarter.

2. Introduce the ASC check for SDs. This can the easily be programmed into any ships longcast and planned for accordingly which would in turn allow much greater flexibility for ships to plan their manpower requirements.

3. Finally but most importantly, of paramount importance is safety. Perhaps

therefore a two day ASC package at DDS would firstly allow divers to be brought up to speed on all current documentation, developments in equipment such as Through Water Communications, new procedures or First Aid techniques. The requirement to dive to maximum depth and a night dive could easily be achieved under controlled conditions, and how many of us manage to achieve either during a 'normal' quarter. An assessment of any SDs current capability could then be easily achieved and the opportunity to implement a fleet wide required standard similarly implemented.

At the start of this article I stated there were many arguments for and against the future of the SD and the information I have provided may indeed stimulate more. However, what is not in contention is the fact that given the current fatality rate and the number of qualified SDs in the fleet who are not diving, then something MUST be wrong and as a professional military organisation we MUST put it right. Whether we take on any of the recommendations that I have suggested above is irrelevant - what is relevant is the fact that the present system for keeping SDs current with all aspects of modern RN diving from minutes to documentation and especially safety, is unacceptable.

**And the answer....**

# THE MILITARY DIVING SAFETY MANAGEMENT SYSTEM (MDSMS)

Lt Cdr Sharkey Ward RN

Having finished my previous appointment in the frozen wastes of Faslane and awaiting my impending exchange appointment to Canada, I was loaned to SofD's organisation for a 3 month holdover period. What was supposed to be a relatively relaxed 3 months of diving, work-ups, painting my house etc turned into 6 months of quite hard graft putting the MDSMS together. I must give credit for the initial groundwork to Stu McAlear, from whom I inherited a lot of paper, and a baffling handover where he talked about things like the HSE, safety cases and IPT involvement, which was all quite baffling to a simple soul like me. However, contrary to what some would have you believe, it is not overly complicated, unless you let it become that way. The setting up of the system was actually quite simple and despite not really knowing a great deal about safety systems the first draft went down well with the diving hierarchy and the HSE.

So if I haven't got around to your unit yet to brief you, many apologies. I couldn't get to everybody, but if you want to come to Toronto you are more than welcome! If your UIN won't quite stretch to that then here goes:

As you will undoubtedly be aware, the RN has recently experienced a series of serious diving incidents. The resulting Boards of Inquiry and the Royal Navy Diving Safety Review (DSR) of late 2002 identified that, while safety checks and procedures are in effect for military diving, there was much more we could do to make diving no more hazardous than it needed to be to achieve military objectives. It was realised that the average service diver, in the front line could make a real contribution to the safety of Service diving.

The creation of specialist committees from unit level upwards, also aims to raise the awareness of diving safety at every level. The aim of the Military Diving Safety Management System (MDSMS) is to promote a culture of safety within military diving at ALL levels.

The MDSMS has been designed to work with existing safety legislation ie. The CinC Fleet Safety Management System (The SHE system already in use in ships and sms). It is based upon similar safety systems for other hazardous areas ie. military aviation and nuclear plant operation. Its purpose is to minimise human error, to highlight technical and procedural shortcomings and to reduce risk. Following the implementation of the MDSMS, Civilian support divers (CSALMO and RMAS) and Joint-service Sports diving will have to follow suit with their own diving safety management systems, which, together with this one, will form the MOD Diving Safety Management System (MoDDSMS) under the control of SofD. The Military DSMS came into force in April this year with the other organisations (Civilian and Sports diving) following suit over the next twelve months.

It applies to ALL military divers, ie. Clearance Divers, SF, SAR divers, Army divers and Ship's divers. All military divers now come under the authority of SofD and with the advent of the Military DSMS all divers will work under a safety management system controlled by SofD. The MDSMS is also pertinent to non-divers that need to be aware of diving safety ie. COs, XOs, MEOs etc.

At the frontline, nothing has really changed in the way we carry out diving Operations (although other ongoing work from the DSR may mean some changes to the way that we work). The goal is to ensure that safety is at the forefront of everyone's mind whilst diving operations are taking place and to allow safety to be balanced against the military requirement. The aim is that the MDSMS will make all divers no matter what their experience or qualification, more aware of the safety culture that must exist in this potentially hazardous field of operations.

## The Diving Incident Reporting System

The previous system for reporting diving incidents was cumbersome and under-used and the introduction of the Diving Incident Reporting System will overcome this.

Taking a leaf from the FAAs book we realised that we needed a blame-free, pro-active incident reporting system that includes near-misses and allows for rapid feedback of safety-related information from incidents to all concerned parties. This is essential to the support of the safety culture that we need. Good Health and Safety speak perhaps, but it was

that until now we had no system in place which would meet our objective.

With the Near Report Form we have established a medium for any diver to report a minor occurance which might otherwise go unnoticed and which could have greater repercussions if ignored. This Report Form does not mean divers having to fill out a series of time-consuming, repetitive forms.

clear So what does the MDSMS really mean? It means that more emphasis is placed upon your safety and incident prevention by you, the diving supervisor and by all divers in the unit, whilst you conduct the plethora of tasks carried out by a military diver.

The correct use of the DSMS and the DIRS will mean that more incidents are prevented by good use of a pro-active safety culture. If near-misses or incidents do occur they can be reported or acted upon whilst not attempting to lay blame. The MDSMS will not excuse negligence on the part of anyone but instead attempts to promote a 'safety culture' within military diving.

The command are now required to take a greater interest in the use and welfare of their diving team and the visibility of the ship's diving team will be heightened at all levels. There are now more opportunities for all divers, no matter what their experience, to raise a safety matter, either internally within the ship or unit and externally to the Diving Standards Team.

The setting up of the system will of course entail some MINOR administrative procedures to ensure that your unit acts in accordance with the guidance contained in the DSMS. Other than that, a standard quarterly safety meeting, (which should happen anyway), quarterly signal and the correct dissemination throughout the unit of all diving safety information is all that is required. The most important requirement is a safe and positive train of thought. The MDSMS was initially promulgated by DCI(JS) to bring it to the attention of all, not just divers. It will also become a separate chapter of BR 2806 at the next amendment.

Anything that raises safety within potentially hazardous military operations can only be a positive step. The MDSMS is not intended to prevent completion of a job, or hinder the brisk and professional way in which we conduct military diving but to complement the positive and 'can do' manner that diving training imbues all military divers with. As with existing health and safety legislation, it is not to be bolted on as an after-thought but must be pushed and promoted at all levels to become an integral part of the way in which we conduct our business.

# 3 Years at Abbey Wood -

## Moving MW Equipment Forward

WO(MW) Pawl Stockley

I departed MOD Abbey Wood after 3 years as the Underwater Warfare Systems Integrated Project Team's (UWS IPT) Mine Warfare Applicator in March of this year to join MCM3. Throughout the time in post, I was often asked about writing articles for the MAD Mag and always responded that classification of the constraint driving the required modification or replacement prohibited putting anything meaningful in to this forum – that has not changed so, in this article I will try and review some of the work, trials and projects from my time in post with the proviso that you accept that why I was pursuing the solution has been omitted where necessary. There are some ground rules to understanding work undertaken (or not): MOD project staff are heavily restrained by budget so, whilst they often know what you want modified or replaced and what the customer (ie. You) wants in lieu, their finance precludes them fulfilling all demands and concessions or trade-offs have to take place. Two old analogies: " The MOD wants a Rolls Royce but can only afford a Bicycle" and, "The contractor will promise you the world but produce a hamlet in the outer Hebrides" demonstrate the diversity of opinion; like most of reality, the truth is somewhere in the middle. Availability of trials platforms is another stumbling block in today's world of stretched commitments – project management will not blow money on purchasing an un-proven entity (nor would we wish them to), so platform unavailability equals delay in introduction. Computer modelling I hear some say? Glad you raised it – in 3 years in post, nothing computer modelled ever worked properly at sea (maybe we can't yet model the sea properly??); when faced with the green, crinkly, no mermaids scenario, gear tended to fail – So a useful development tool yes but, if you want to know if it does what it says on the tin, let the WO(MW) take it to sea! Also, as a corporate body, we in the RN are not good at highlighting shortfalls. An example being the number of people that would want to quiz me when I was sea riding or attending a meeting and say " What are you doing about the problems with XXXX?" I would raise an eyebrow and ask if any formal identification of the shortfall such as S2022 or letter to Squadron Staff had been raised, the common reply would be "Er..well No". Please continue to talk to your friendly WO(MW)s, but it is crucial to support observations in more formal feedback; the WO will debrief project staff but only formal reports identify trends, provide evidence and most importantly, provide the argument for funding to investigate, modify or replace.

Sermon over then, crystal ball time. In no specific order:

### Sonar 2093:

**Consoles.** The new consoles are single flat screen with the main search/class picture, expanded range display and CEU Totes shown on the single screen (CEU keypad is re-sited to the left of the screen so that all functionality is at operator height). Other changes are a fault warning if Mag Var is not entered (extinguishes when it is entered) so you cannot forget to re-enter it after re-boot. Side-scan is displayed in a vertical 'waterfall' format as opposed to horizontal scroll.

Successfully tested in CROMER on the FORACs range at Stavanger (Norway), only funding is withholding fit to class.

### RTPM2 and Modified Auxiliary Cabinet

RTPM2 looks to provide your predictions on a windows based COTS PC which will also give ORS/Ops a further computing facility in the Ops Room. RTPM2 holds many more functions than it's predecessor, inc ray bounce predictors (to identify holidays in insonification) and a shore-side analysis facility for post op work. The RTPM system now takes the upper section of the Aux Cab (the PEC boards take the bottom so that the operator is not the one scrabbling on the floor), an Alden printer doubles up as RTPM printer and SSRTSV hardcopy recorder (switch on and go, H&S acceptable paper and buffers that allow you to move through the RTPM programme without waiting for print jobs to finish…) and a COTS VCR completes the fit. The RTPM2 final trial took place recently (INVERNESS) so I am aware of no further barriers to class fit.

## Modified Flux Gate Compass

Provides superior positional accuracy for bearing when calibrated and has been proven to do so on the FORACS range (Norway)(trials in INVERNESS and CROMER). Reservations over calibration procedure, validity and interaction with magnetic dip, degaussing and sea state (trials in SHOREHAM) continue to be investigated by further sea trials, simulated movements at the Magnetic Land Range and computer modelling – my successor, Pete Whitehead, will have carried out further trials by the time of this magazine's issue.

## Technology Update

A revamp of the Towed Body internal workings is at the early discussion stages – one for the horizon.

## Sonar 2059:

The Replacement Control Unit is being developed to improve vehicle tracking and I presided over first sea trials in 2002 (QUORN) which provided valuable R&D data to allow further progress. A further trial is planned for early Autumn 2003. (Timely reminder for the MHSCs:

If you hover with your stbd shaft going astern you will put the wash over the probe and deafen it. Hover with port astern and stbd ahead and you will see markedly improved tracking).

## Universal Transponder

Successfully trialed in BRIDPORT and BROCKLESBY, now in service. One transponder for Hunt, Sandown and Sub Rescue, fully interchangeable with channel settings switched to align with the host sonar on the vessel. Firm 'click' channel selectors to remove ambiguity of on/off/channels. The Uni Transponder also brought a markedly improved vehicle tracking performance with it.

## RCMDS:

Ballast & Trim weights for the Mk 2 vehicle to allow the operator to 'trim' for different salinities. Successfully trialed in WALNEY in UK, Middle Eastern, Med and Baltic Waters, the vehicles are now modified and the spread-sheet for density versus weight fit is now being readied for issue.
Fuwakara Fibre Optic Splicer. Can be operated by an OM and pronounced by a Chief. A splendid little piece of kit that allows onboard re-termination of the fibre optic RCMDS2 bobbin, in turn offering multi-shot bobbins and reduced bobbin logistic frailties. Now in service (post trials in CROMER, INVERNESS & PEMBROKE). Coaxial re-termination has also been trialed successfully (HURWORTH & QUORN) although I have some personal reservations over the financial gain versus operator effort of the latter.

## Manipulator Arm

The fragile manipulator arm has been ruggedised and is now fit for (it's limited) purpose. Extensive trials in CROMER proved the modifications and the arms are now held in store for specific tasking if required; they will not be issued to hulls as a matter of course.
Funding. Handling and management of RCMDS consumables has been an issue and it will continue if onboard procedures are not adhered to. RCMDS funding will be phased towards Mine Disposal System (MDS – often incorrectly referred to as 'one shot') idc – don't compound the ramp down problems before the system is withdrawn from service. MDS will take a while to enter if we are not to repeat past mistakes. Whilst systems are available from commercial suppliers now, proper investigations and trials into acoustic and magnetic signatures, effectiveness of charge, hydrodynamic stability and onboard integration with other systems take time – cost is not the only consideration.

## SONAR 193M:

A slowly fading beast, spares have been ramped down in advance of the 2193 fit. Any work done on 193m was to explore spend to save measures to get the system to the end of it's life with the exception of LEDBURY's FORACs ranging which was to identify the alignment accuracy of the system, establishing a base line for the Hunt in advance of 2193 Fleet Weapon Acceptance (FWA) and identifying suitability of some of the 193m components for use with 2193 (e.g. the Stable platform).

## Minewarfare Tactical Support System:

In it's death throws and many would not offer the kiss of life. Any changes now will be driven by safety cases, otherwise the introduction of Minewarfare Tactical Support System (Replacement), MTSS(R) will be the next major event. The Tender Assessment has completed and a supplier elected. The new system should be with us by 2005 and will sport many features not unlike the RANs MINTACs system. Many

of you out there wanted real time connectivity to other units via MTSS and your arguments were both heard and understood. They were not ignored but must be aspirations for the future – please start reading again at the word 'budgets' and 'funding'.....

## Route Survey Data Base:

Over it's teething problems and producing some goods. Interface now working with MTSS (which in turn works with the ship's AIO systems). Introduction of Additional Military Layers (AMLs) next year may well have an impact on the future intentions for RSDB.

## Mine Sweeping:

**MS Mk 14.** Re-mateable connectors and a new towing elbow are on trial as I type. All modifications are now aimed at support savings. Please Mr, can I have my Remote Influence Minesweeping System (RIMS) please? TAG. Sorted.

**WS Mk 8.** Calibration of KOMs under scrutiny and streaming procedures and speeds for maximum swept depth under trial by my successor.

## Summary

It doesn't look like much work for 3 years does it? There were a lot of hours, miles and sweat to achieve the above and I also became involved in some detailed work for various contractors and MCMV IPT to achieve our combined aim – no small challenge. Additionally, the latter 5 batch 2 MHCs were pushed through Part IV trials (some easier than others) and many a course was lectured to. I'd be lying if I said it wasn't fun. For those of you who believe that the Civil Servants at Abbey Wood are not listening or not supporting us, I urge you to think again. The team I worked with are extremely committed and frustrations that they could not do more because of financial or time constraints, availability of test platforms etc often surfaced. They do monitor the MCMV flotilla, willing to assist – you can help them fight for funding with written evidence of shortfalls as previously mentioned. Help them to help you.

Pete Whitehead now has the reins and I am in Faslane with MCM3. We have a kettle. Don't be shy.

# A Fishy Tale

by Knocker Nigel White

In 1975 the then Saturation Diving Team went to Panama City in Florida to prove the saturation decompression tables they had been doing trials on for the previous two & half years. These dives were done with the USN Navy on board their barge the YDT-16 using their Mk 1 Deep Dive System.

The dive team comprised off: Lt Cdr Chippy Norton, FCPO Nobby Clark, CPO Cris Ballanger, PO Darby Allen, Medics Dolly Grey & Charlie Borge, CDIIs Tony Pritchard, Billy Smart, Jock McGovern, Bagsy Baker, Dusty Miller, Jock Ohanlen, Jan Pauley, Icey Coldwell, Jim Mead & Knocker White.

13-07-75

The time came to do our first dive, so Darby, the bellman & I suited up in the entry lock and then transferred under pressure into the bell. The hatch in the entry lock was closed as was the hatch in the bell and the trunking, that is the dividing passage between the two was vented of pressure to atmosphere. The bell was then locked off and we were lowered over the side to depth.

At depth we did our pre dive procedure and Darby & I donned our bail-outs (emergency gas supply cylinder) and put on our KMB 9s and locked out, moments of glory, we were the first divers on the team to lock out in saturation into the open sea. There was a long lazy swell running that day and as the bell wire winch was not on an automatic compensator to maintain a constant depth the bell moved up and down in time with the movement of the YTD 16 on the surface swell.

Darby locked out first, followed by myself and due to the bells movement we hung onto the onboard gas cylinders frame work while we checked each other out for leaks. It was a good day for diving, at a 100 meters the water was crystal clear. As I was checking Darby out for leaks, I noticed a fuzzy kind of shadow in the far distance, at the range of the visibility where objects start to get blurred before they disappear. But rather than disappearing, it was getting closer! I started pointing and gesticulating towards it. Darby was looking all around, everywhere but the right place and through his faceplate I could see the look of puzzlement on his face, but not for long!

There it was in all its greater glory coming to check out what surface creatures had descended into its territory? It was not a shark but it was big and we were not a pair of happy teddy's. As the bell oscillated with the swell so would our new visitor as it closed in on us. I remember hanging onto the onboard gas cylinder frame work and it appeared to be as high as I was tall including the extension to my height with my Jet fins on and wide enough to support a mouth with lips like Dunlop tyres! As the bell dropped towards our new friend it veered off and did a quick circuit and came in again and so the game went on. Darby and I looked at each other and read each others thoughts, "**** THIS! We were in the Navy and not the Army and we were not going to "soldier on"!

Darby indicated for me to get back into the bell, last out – first back in. I went into the trunking that was already flooded and started entering the bell. As I was passing up through the trunking the valve on my hot water suit, that controls the water intake from the hot water umbilical, became fouled on the outer lip of the trunking. There I was hanging there with my legs dangling out of the trunking from the waste down like a couple of little worms acting as an enticing piece of bait to catch a big fish! I was feeling very vulnerable at that moment in time!

Mean while Darby was equally uncomfortable and was having thoughts like shall I cut his legs off? Just then I freed myself and got into the bell and without taking any of my kit off, I stood up and moved around the hatch combing of the bell trunking in order to make way for Darby who would be hot on my tail. Sure enough up came Darby through the trunking, now Darby weighed 200 lbs in his nicks & socks, add to that his diving kit, bailout cylinder & lead weights etc all of which amounted to a respectable weight. The adrenaline was running and with that comes strength, "fight or flight", I bent over and crabbed his diver recovery 'D' ring situated at the back of his bailout jacket and lifted him out of the trunking in one movement and sat him down in the bell.

We took our KMBs off and just looked at each other for a while, after all what was there to say?

So what was it that had come to play with us? The answer was a Jewfish, a member of the Grouper family and known to the Arabs as 'Hamour'.

Grouper is the common name for numerous heavy-bodied, large-jawed, sedentary fishes. Most groupers are members of the genera

Epinephelus and Mycteroperca of the family Serranidae and inhabit temperate and, especially, tropical waters. They vary in size and most groupers can change their coloration. Some, such as the blue-spotted argus, Cephalophalus argus, can do this almost instantaneously, changing from a dark to a light color phase when feeding or alarmed. The blackfin grouper, M. bonaci, is dark red when taken in deep waters but much lighter when taken in shallow waters. The smaller species that show spectacular colour changes are highly valued by aquarists. Many species undergo sex reversal, from male to female, producing sperm when young and eggs later on. Sometimes they produce both, but whether they can self-fertilize is not known.

And from that esteemed family tree comes the well-known jewfish, or spotted grouper, E. itajara, found from Florida to Brazil who came to visit Darby & I and is among the largest, reaching about 340 kg (about 750 lb).

All though Jewfish are very sedentary, very inquisitive, very large, very territorial but supposedly harmless, it was on record that a USN diver was sucked in by a Jewfish up to his waist and when the Jewfish found it could not handle taking in the bailout cylinder, it spat the diver out who apparently on being checked out on the surface found he was supporting a giant love bite from the hips down. (By ED - Some guys have all the luck!)

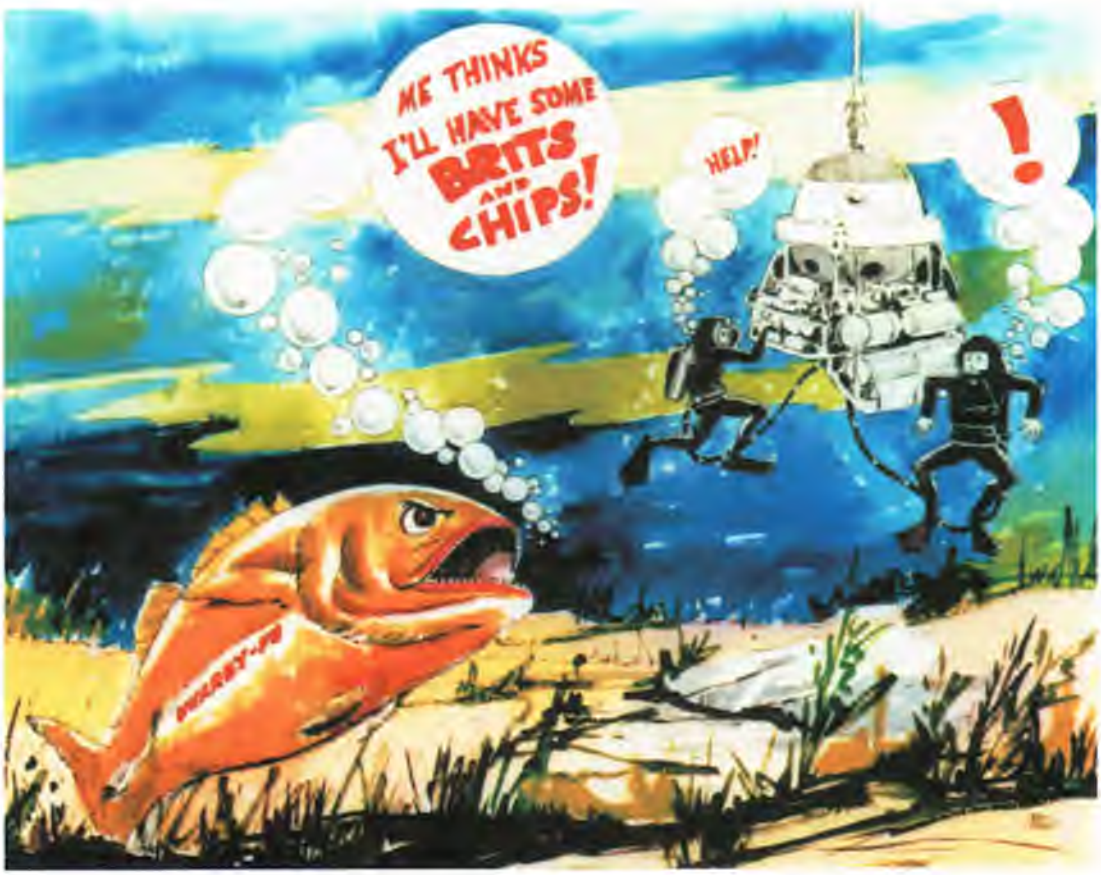
The story lives on: Some how the story found its way in to a couple of the British tabloids and one day back in Portsmouth, Sue (my girlfriend now wife) was passing the time of day in a dentists waiting room for her appointment when all of a sudden she started shouting, "That's my boyfriend" and everybody in the waiting room were made aware of the story of "Dwarby-Fu"

By way of explanation I will have to back track to the time when Darby knew a young lady who did not so much have a speech impediment but is what may be called awfully well spoken and when addressing Darby she would call upon him with those immortal words "Dwarby Dwarling" and our American cousins took great delight in picking up on this, much to their amusement.

My interest in the Martial Arts had not gone unnoticed and so "Fu" was an abbreviation of Kung Fu.

One of the Americans on board the YTD 16 drew a cartoon of the incident that became known as "Dwarby-Fu".

Darby and I did a subsequent lockout and I remember it was a night dive and just before I entered the entry lock Nobby came up to the got onto the comms and asked me how I was feeling? "Ok thanks Nobby, but a little appreh-ensive, I wonder if it is still down there?"



# a note on The RNLI

Dan Nicholson

A lot of water has passed under the bridge since I last communicated with the 'old team' of which I was once a very proud member – the MCD Branch. Although still a fully paid-up member of the MCDOA I am now a fairly long-in-the tooth retiree from the game of hunting mines. And, since 1995, have been involved in the equally daunting and sophisticated business of hunting for casualties at sea – as a Training Manager with the Royal National Lifeboat Institution at Poole, Dorset.

Rob Hoole tied on the right dry fly and cast it my way a couple of weeks ago. Like a hungry (and foolish) trout I rose to it and would like to pass on to you some info about what we (the RNLI) do and how the functions of our two organisations are different yet similar.

It took me a good while to settle after 30 years in the RN. It seemed that I only had to add two more initials (LI) to those of my previous organisation to make the transition. Not quite true as, although there are by its very nature, a lot of other professional mariners on the staff – this charity has far broader horizons than simply being the nation's number one maritime Search and Rescue organisation with an RN input.

The RNLI is a voluntary organisation incorporated in a Royal Charter for the purpose of saving lives at sea. It is a registered charity that exists to save lives at sea. It is funded entirely by voluntary contributions and receives no government backing whatsoever. It costs a staggering £100M to run each year so you can readily see that fund-raising is a major part of the organisation. For every £1 that is raised and spent about 85p goes to the 'teeth' and 15p goes to the 'tail'. We have to raise about £270,000 per day to keep the complex system fully operational.

There are at present 231 operational lifeboat stations around the coasts of the UK and the Republic of Ireland. Like the Irish national rugby team, we know no borders throughout Ireland. The Island of Ireland is designated it as one of the 6 Operational Divisions run and administered by its own, discrete support base and multi-skilled staff in both Dublin and Belfast. The other 5 divisions are Scotland, North, East, West and South and they too have their own local divisional Headquarters within their geographical borders. For example Div Base (South) is at Saltash and supports the 35 or so stations from west of the Isle of Wight, along the south coast to include the south side of the Bristol Channel. Each Div Base is led by a Divisional Inspector (DI) and he has 2 other Inspectors – one for Training (TDI) and a Deputy (DDI). There is also a healthy representation of engineers and technicians as well as admin staff who are available to assist with any problems that occur at any of the station in their 'patch'.

The RNLI has more than 400 lifeboats. Just over 300 are operational at stations, the others are held in readiness (the relief fleet) in case any station boats are damaged or in need of replacement, refit or repair. This probably makes the RNLI one of the largest shipping companies in UK! The lifeboats themselves are generically split into 2 groups, the Inshore fleet and the All-weather Lifeboat fleet. The former, ILBs, are 5m - 9m RIBS and smaller inflatables while the latter (ALBs) are displacement hulls from 12m - 17m in length. They are all berthed or housed at their own stations around the coast in small, seaside villages, and are often community centres in their own right. You will no doubt have seen them as coastal landmarks (fixing points) and the Institution tends to construct them to last – other phrases spring to mind! They all have fairly unique launching methods such as slipways and carriages but that's for you to investigate when you visit the next one on your bucket and spade leave with the wife and kids.

To support this very complex and diverse fleet there are more than 1000 full-time employees. About half are based at the Headquarters in Poole, Dorset and the remainder are out on the coast as full-time Coxswains, lifeboat mechanics, Divisional support staff and professional fund-raisers.

How does it all work? The RNLI has a charter with the government to provide a maritime search and rescue service out to a certain distance off the coast and to get there within a certain time. All the RNLI's lifeboats are 'declared facilities' and the Search and Rescue Units (SRUs) may be called out by the Coast Guard MRSC/MRCC at any time of the night or day 365 days of the year. They may also

self-launch if there is an immediate life-saving need.

The vessels are crewed almost entirely by volunteers – about 4500 of them altogether. Each ALB station has a full-time Mechanic and an increasing number have full-time Coxswains too. There is only one station with a full-time crew at Spurn Head, Humber and ILB stations do not yet have any full time personnel. The volunteers operate on a pager call-out system that is usually activated by the Coast Guard after they have first requested and gained the permission from the station's Launching Authority. He/she or they are the volunteer officials who are affiliated to each station and who have the authority to say yes to HMCG's request for a launch to a particular casualty or situation. Sometimes this is not an easy task and calls for a detailed knowledge of the locality and the capabilities of the station boat and its crew. Once launched, the ALB Coxswain or ILB Helmsman is in full command and works directly with the Coast Guard's Regional Co-ordinating Centre and the casualty by radio on VHF radio. If an ALB is on service outside VHF range, on board MF/DSC facilities are available.

Training is a very big issue in the RNLI. The natural turnover of volunteers is between 10-15% per year and this alone makes training (and assessment) a very large, ongoing requirement. The relatively small training staff – around 25 Instructors – manages to deliver courses to about 3000 'bums on seats' each year. Students are trained at a variety of venues. As much as possible, we try to provide training at their stations to avoid having to take them away from their homes in their holiday time or from their work at their employees' concession. At their stations we can provide Mobile Training Units (MTUs) to deliver training in First Aid, Seamanship, Radio Communications and Radar/ Electronic Navigation. The MTUs are, if you like, mobile classrooms in which the Instructor is also the driver. He provides the specialist training in his Unit (or a local facility). These courses last up to 2 weeks (4 evenings a week) and successful students receive nationally accredited qualifications.

Other training delivery takes place at the Training Centre, Poole (for ALBs) and at a smaller Centre (for ILBs) in Cowes, Isle of Wight. In addition, we outsource our Sea Survival
training to maritime colleges. We try to ensure that every sea-going crew member has this qualification.

The RNLI encourages and sponsors crewmembers to take other courses by distance learning or at night school. Favourites are the RYA shore based theory courses at Coastal Skipper/Yachtmaster Offshore level and, as a registered RYA Training School, we provide the facilities for RYA Practical examinations at both levels using the 3 training lifeboats at Poole. Search and Rescue training is, of course, one of our biggest issues. We run 'internal qualification' courses in SAR and related subjects at 2 levels for ALB crews and all the Inshore lifeboat courses include SAR components.

But none of this training comes cheap. We currently spend in excess of £4m per year on crew training. From my previous training experience (Diving School and MW Section VERNON) I find myself in a somewhat unusual situation witnessing an 'increase' in training interest and investment. When I joined the RNLI in 1995 we were spending around £800K per year!

In the last 2 years a Competency-based Training regime has been introduced throughout all the Operational Training that the RNLI delivers. Having now left behind 'Objective Training' we can measure and record the individual competencies of every crew-member in each skill area and all of our training now results in nationally recognised qualifications. This is not the same as an NVQ system because there is not the same paper trail – but we do rely heavily on the good old Task Books!

Just around the corner (literally) stands the framework of the new Lifeboat Training College that will be ready for our occupancy mid-2004. It will take training to new levels and, with its own 60 en-suite bedrooms, will bring it all under one roof at Poole. It is a very exciting time and it is very gratifying to see proper recognition of the importance of investing in training – some would say "Yes, training is expensive, but think of the cost of ignorance".

Looking at the RNLI in more general terms I would draw your attention to the latest SAR Framework Document for the UK and Northern Ireland produced by the Maritime & Coastguard Agency (June 2002). This short book describes the background, scope and responsibilities of UK Search and Rescue and its strategic and operational management. It also describes more fully those authorities and organisations who provide a significant role in the provision of SAR. This framework document does not cover the Republic of Ireland but to re-iterate, the RNLI is just as active there – with the Irish Coast Guard and Department of the Marine – as it is in UK.

How will you come across the lifeboats? Apart from visits you might make (and the public at large is more than welcome) to individual stations, your first meeting might be at sea

during a search mission for a lost vessel. This is really where the well-trained crews come into their own. The local knowledge of the crews is something we expect of them – we could never train them in this. I have many spent hours weaving in and out of salmon farms in a Scottish loch in a 52 ft Arun class lifeboat and other (interesting at my golden age) being in awe of the young helm of a 16 ft inflatable D Class who could breaks through a gap in the Cardigan Bay surf to rescue a young family stranded by the rising tide. The all-weather boats are well equipped for accurate navigation. For the last 10 years they have had electronic raster charts (ARCS) a good commercial radar (Racal Decca Bridgemaster series) and, of course, a very robust DGPS. Not that absolute reliance is placed upon electronic navigation, BA charts are also held although position fixing is somewhat difficult in a small boat in a force 8! In the big boats, a full first aid outfit and stretchers are carried and a number of crew are qualified first aiders, a self-contained salvage pump (in waterproof capsule) and, in some cases a daughter boat which has a reasonable capability in calm weather. All lifeboats can tow but this is not their main task. If the best way to save lives is by towing a casualty vessel to safety then that's fine but we're not in the business of property salvage.

The real strength in depth of the crews is detailed knowledge of their own area but the more experienced members are trained in how to develop search areas using conventional, agreed patterns. There is generally only one radio operator in each lifeboat and, although a number of the crew might be qualified, the radio watch capability is very limited. More modern vessels have voice recorders but most radio operators still have to keep a manual record. This is done for post-exercise report purposes but all radio transmissions are fully recorded by the local Coast Guard station anyway.

One common area in which both our organisations get involved is EOD! Surprised? Yes, so was I when I was made the RNLI's Point of Contact for such matters. Every year lifeboats are involved in a number of incidents involving UXOs (I hope this is still the OK phrase). RNLI Coxswains regularly get asked to transport EOD Unit personnel out to the UXO sites that may be out of reach of their own water transportation. Since 1997 I have had in place an agreement with both the RN and HMCG that lifeboats are not to be involved directly to these incidents. Quite simply, neither the boats nor the crews are insured for such activities. But they can and will assist in establishing a cordon around an area to warn off any other shipping. So please remember next time you EOD men get a call, the lifeboats exist simply to save lives at sea.

The overall messages I would pass to you about working with lifeboats are that they are very seaworthy, have limited endurance, their crews are well experienced in SAR but they have very limited co-ordinating capabilities. This may be where warships are best employed, as the SAR co-ordinator. The lifeboat crews can give lots of local advice and the Coast Guard will give direction. I have even heard of cases where the co-ordinating warship took on board an experienced lifeboat crew as SAR advisor – and this happy combination worked too!

If you would like more information on how lifeboats and the RNLI in general works I would be more than happy to either provide written briefs or visit you in person. But the best source of such information is certainly from the crews themselves at their stations around our coasts. I am sure they would really appreciate a tour of your grey steamers and would be proud to show off their stations and boats to you too.

I hope that this has given you some food for thought and perhaps helped to bridge some of the gaps in your general knowledge of this truly amazing national institution. Our Headquarters is here at Poole and we would be more than happy to host visits – especially once we are installed in our new Training College – after July 2004.

My very best wishes to you all and please do keep up the MCD traditions and standards, they are important. See you at sea sometime in something orange and blue – probably in the Solent.

Dan Nicholson
All-weather Lifeboats Training Manager
MCDO Course of 69/70

# RN DIVERS
# & THE USS MONITOR EXPEDITON 2002

CPO(D) Steve Strange

## The Task

In early 2002 Captain Chris Murray USN, Supervisor of Salvage, for the US Navy, invited representatives of the Royal Navy Clearance Diving community to participate in the turret recovery of the historic wreck the USS MONITOR. The wreck lies in 240 ft (70 m) of water 17 miles off Chesapeake Bay, North Carolina. As the UK Personnel Exchange Programme Chief Diver for the US Navy based in San Diego I was asked by the Command at Consolidated Divers Unit (CDU), to organize the cross-poll of personnel.

## US Navy Divers

With regard to US Navy diving, it must be understood that the community is split into two very different elements. First, there are Fleet Divers or 'Hard Hat' Salvage Divers, who mainly conduct salvage tasks and underwater engineering. They primarily use surface supplied gear, KMB Superlite 17B and an AGA Divator derivative known as Mk20. Second, there are EOD divers, who are a separate entity entirely and their primary skill is in EOD, with diving purely a means of transport to the target. Fleet Divers spend significantly more time underwater than EOD, they therefore consider themselves, with some justification, the experts in Military Diving in the US. Confusingly Diver is not a source branch in either diving communities, and you may have the situation where a CPO Parachute Riggers' (PRC) diving qualification equates roughly to that of an RN Diver 2's.

Due to the nature of the USS MONITOR task, it seemed appropriate to ask for experienced divers from SDU and NDG to participate in this exchange. After consultation with FDHQ Leading Divers "Sonny" Liston and "Arty" Shaw were chosen by their respective Units to participate. Both arrived in San Diego, California on the 6th June 2002. Two weeks were spent in San Diego working at CDU, conducting shallow water training dives on Mk21 (KMB Superlite 17B), work up chamber dives to 165 ft and some classroom work reverting back to feet & inches and psi instead of bars and metres. The three of us departed for the East Coast, to Navy Amphibious Base, Little Creek, Virginia, where Mobile Diving and Salvage Unit 2

Dive Barge

(MDSU2) is situated; this unit were the lead Unit for the USS MONITOR recovery. After a few days delay for weather we joined the barge, at Norfolk Navy Yards, which was to be utilized as the mission platform for the turret recovery task.

The mission dive platform was an offshore facilities barge, normally used in the Gulf of Mexico for oil exploration, contracted from trade. The barge was fitted out with a Saturation Diving System, a Helium/Oxygen surface supplied diving system, two containerised recompression chambers, a 500 ton crane, which would be required to lift the MONITOR's turret and guns, plus living accommodation for 90 plus divers and barge crew. The barge departed from Norfolk on 23 June for the 36 hour transit to Cape Hatterras, North Carolina. Whilst under tow to the wreck location, training was conducted by MDSU2 personnel with assigned dive teams. Dive teams were split into a day crew and night crew with a watch turnover at noon and midnight. Each crew consisted of approximately 25 personnel from various US diving detachments integrated by MDSU2 personnel. Training consisted of Operating Procedures and Emergency Procedures on the Flyaway Mixed Gas System (FMGS), diving stage handling procedures and operation of the prototype Standard Navy Double Lock chamber (SNDL) to be used for both surface decompression and therapeutic recompression.

The wreck of the USS MONITOR

The USS MONITOR was revolutionary warship for its day; one of the first ironclad warships, the MONITOR started life as, the USS MERRIMACK, a conventional fighting sailing frigate of the Union Navy. The ship was re-launched in January 1862 as the MONITOR and had been totally metamorphosed into a sleek iron warship with virtually no freeboard, with a 5 inch thick armoured belt and a 360-degree, revolving armoured turret, complete with two 11-inch cannon. At the height of the American Civil War, the Confederates had a superior Navy to their Union counterparts, with the Confederate ironclad CSS VIRGINIA creating havoc in the Hampton Roads, having rammed and disabled the USS MINNESOTA. The Confederate Navy was threatening to proceed up the Potomac River, into the very heart of Washington with the Union fleet at its mercy. On March 9 1862 barely 2 months after it's launch the two ironclads were to go head to head with each other in the entrance to the Hampton Roads. This was the first time in history that ironclad, steam powered warships had confronted each other. Rumour ran rife about the imminent conflict and thousands of onlookers gathered on each bank of the river in eager anticipation of the coming battle. The ships eventually engaged and fought a running battle for 4 hours, firing at times at point blank range. The cannon shots bounced off each armoured ship like spitballs, denting but not seriously damaging either ship, although the Captain of the MONITOR was nearly blinded by hot shards from a direct hit on the pilothouse. After slugging it out for so long, the two ships finally withdrew, both ships' boilers seriously overheating, and each side claimed victory. This inconclusive battle however ushered in a new era of Naval Warfare, signalling forever the end of wooden fighting ships.

The MONITOR spent the next nine months patrolling the James River finally receiving orders to head South. On December 31 1862, the ship was under tow, 16 miles off Cape Hatteras on route to Charleston. when a storm passed through. With only 18 inches of freeboard and worn caulking between the turret and the hull keeping the Atlantic out, the ship was in grave danger. Late that evening the ships' pumps had been overwhelmed by the amount of water the MONITOR was shipping, the ship was in fact sinking slowly. Sometime around midnight the order was given to abandon ship, however during this last act the MONITOR was broached by a huge wave and turned turtle. The only escape route from the ship was through the turret and this was were the last 12 men were waiting to depart when the ship sank.

Turret recovery

The mission during this salvage period was to recover the armoured turret of the MONITOR, which contained the two 11 in. cannons, and possibly the remains of 12 sailors who perished. The ship when it sank in 1862, inverted on descent with the gravity held turret falling away first, the hull of the ship landed upside down with the armour belt of the ship coming to rest on the turret. Vast quantities of debris had to be removed from around the armour belt to gain access to the turret, with the section of armour belt pinning the turret required to be cut away. The barge was placed in an 8-point moor over the MONITOR early on the 26 August, in 240 ft water. Diving commenced immediately with all Royal Navy divers being attached to the day crew, starting at noon and finishing watch at midnight. All surface supplied dives were conducted using Mk 21 hardhats (KMB Superlight 17), booted diving from a stage, with hot water. Diving tables used were mixed gas He/O2 using 85%/15% mix for the depth, employing in water and surface decompression stops. This table is familiar to anyone who has dived RN 75 m surface supplied tables being similar in almost all respects to those procedures. Dives profiles were usually 40-minute bottom time, giving 65 min in-water stops and 2 hours in the chamber. All US Salvage Diving is conducted using a diving stage on surface supply with divers wearing boots. A pair of divers would descend on the stage initially on air to 30 ft (the 15% O2 mix would not sustain life on or near the surface). At 30 ft bottom mix would be selected and the stage lowered to within 30 ft of the wreck so as not to damage the structure in the advent of drift. Divers would then leap off the stage and go to work, if the divers were productive and achieving the task they would be given 40 min bottom time, if not they would be given 20 minutes, the RN divers were naturally always given 40 minutes! The typical tasks would be to clear away debris from on and around the turret in preparation for recovery; because the wreck was upside down a lot of bunker coal had concreted itself around the structure. The current on the seabed was steady and manageable, however near the surface it was strong and variable. Barracudas were the normal guests on stops being inquisitive and persistent. At the designated time the divers would be called back to the stage, climb their own umbilical the 30-40 ft to the stage and get squared away ready to leave bottom. After the designated in-water stops, mostly on 50/50 Heliox mix, the stage would be brought to the deck and the divers placed in the chamber for surface decompression of normally 4 periods of 30 min on O2.

In all 5 dives were made by RN divers during the period on board and I was invited to supervise dives and surface decompression. RN divers were fully integrated into all aspects of the mission fulfilling primary tasks as, chamber drivers, attendants, comms number, dive recorder and standby divers. The RN divers departed on 1 Jul 02 having been personally thanked by Capt. Murray USN, and Cdr. Bobbie Scholley, CO of MDSU2, for all the effort and professionalism shown.

## UK Visit

Two USN 1st Class Divers visited the UK in July and were hosted by the Southern Diving Group. The original intention was for USN divers to spend one week with SDG and one week with NDG, however due to time constraints, the divers remained with SDU1. The US divers experienced life in an RN EOD Unit and were involved in an EOD job in South Wales.

## Conclusion

This was a unique opportunity for three RN Divers to dive on a truly historic wreck, the first foreign nationals to do so, in challenging conditions on a multi-million dollar operation. It proved how adaptable RN Divers are and allowed useful experience to be gained in large-scale diving ops. The team enjoyed the challenge of diving another nation's equipment, using unfamiliar rules, with limited familiarization opportunities. The integration with our US diving counterparts, who have great respect for RN Divers, was a rewarding experience for all involved and will be long remembered.

# Northern Diving Group

## Range Clearance Operations at Cape Wrath – Garvie Island

Lieutenant Commander John Burden RN
Commanding Officer
Northern Diving Group

UW Photo's taken by Warrant Officer Diver Windy Gale (Olympus Camera)

Surface Photo's By Lt Cdr Burden SONY DSC F505V

In the rest room at Northern Diving Groups HQ building the Divers wait tentatively to find out who the Chief Diver has nominated to go to Garvie Island this year. Tension is high and when finally CPO (D) Willie Sharp puts the names on the board there are going to be disappointed people. Going to Garvie to do the underwater clearance of predominantly live 1000lb bombs is a great experience. The Diving is superb and although the weather can be tricky even in difficult conditions the environment beneath the waves is a paradise for a Clearance Diver. Supported by a SERCO vessel NDG deployed 13 people to Garvie Island in the last 2 weeks of July this year to clear up unexploded ordnance dropped by aircraft during exercises throughout 2002 and 2003.

Garvie is situated on the NW tip of Scotland 6 miles west of the village of Durness, where the Diving Team stay whilst deployed. The landscape and scenery in the area is magnificent and on a sunny day from Balnakiel Beach you can be forgiven for thinking that you might just be somewhere in the Caribbean. The water is crystal clear and chillingly cold, the terrain ashore is considerably varied. There are towering sand dunes covered in tuft grass, deserted white sand beaches, 600 foot granite cliffs and open moor land with magnificent vista's running back to the Scottish mountains in the distance. For most of the 10 day period this year the weather was kind to NDG and so this was our setting for 10 days of the best diving to be found anywhere in the UK.

The team arrived at Garvie by road, the long journey made all the more interesting by

having to tow the 7m EOD RHIB behind an IVECO truck along single track roads. Our resting-place each night is "MacKays", what used to be the Parkhill Hotel, run by Fiona and Robbie MacKay. The surname is not unusual in this part of the world indeed every other person we meet seems to be called MacKay. The team fill the small retreat and Fiona marshals us around for the duration of our stay making sure we are all well fed and watered after each testing day. If you ever need a romantic break surrounded by breathtaking scenery you really should visit this place – just don't go the last 2 weeks in July when it will be full of Navy Divers!

When operations begin Chief Sharp ably assisted by PO (D) Jim Slade ensure the troops get all the necessary gear and equipment loaded out into our SERCO support boat the OMAGH. This small but robust vessel is a diving platform for the duration and is ideal for our needs. A clear working area aft allows the team to prepare diving gear and explosives prior to deployment and a covered passenger area provides an excellent briefing, changing and stowage space. The crew are good old bunch of seadogs whose only drips are that there is no where to get alongside and there is no TV signal. They do everything they can for the dive team and provide excellent support throughout the deployment.

A day of operations follows a fairly set routine, a hearty breakfast at the hotel is followed by a quick call at MacKays village store for papers and rations, a quick load up and head count and the team make the 2 mile trip to Balnakiel Beach. Here two of the youngsters get dressed into dive suits and make the 500m swim out to the EOD RHIB, which is moored off the beach and is left each night. Kit and people then transit out to RV with OMAGH about 1 mile to the west of the beach and enroute to the Island. After securing the RHIB astern the remainder of the transit is hectic preparation of diving equipment and gear. LDs Joe Gow, Robbie Boyle and Cozy Powell oversee the whole thing making sure that the Chief's every desire is met. The team use the SABA diving set for operations and the compressor features heavily in the mornings work schedule topping up the sets. Personal dive gear is checked and prepared, diving boat preparations are all made, resuscitators are checked and fuel is loaded while Willie and Jim plan the search area for the day. Garvie sits on a small shallow plateau at about 15 metres. This shelves away rapidly to the North of the Island while the shallow gap between the main land and the Island creates difficult tidal conditions for diving operations. Previous knowledge proves that most of the weapons are likely to be found directly East and West of the Island with 600 meters of the rock. Today Will and Jim decide to operate on the Eastern side of the Island where conditions are more benign from a diving perspective. With preps made the team gather in the cabin area of OMAGH and conduct a detailed dive brief. All of the divers will get their chance and Divers, Mac McCluskey, Joe Gomer, Bry Bryson with Keith Bruce and Joe Perry (both Canadian LS (D)) are all poised to go. Search operations are to be conducted visually allowing the divers to cover segments of the seabed as directed by the diving supervisor and

the divers will operate the maximum endurance of the SABA air diving sets. Once the brief is complete the nominated dive team make final preps and load all their gear into the EOD RHIB. OMAGH positions herself within 500m of Garvie and tries to stay out of the Atlantic swell that finds its way around Cape Wrath and into Balnakiel bay. With communications established the dive boat leaves the ships side to start the operation. The team left behind in OMAGH set about preparing a second wave of dive equipment and start preparing the 4lb explosive demolition packs for the inevitable live finds.

In the RHIB now sat just 10m away from the island there is great anticipation. The Divers receive their final briefing and don their masks ready to enter the water final checks complete 3 divers enter the water and check each other for leaks before leaving surface to look for the Green coloured 1000lb bombs. The bombs are painted either green (High Explosive) or blue (Inert) and marked accordingly to indicate what they are filled with although the sea takes its toll of the

condition of the weapons. Beneath the waves the sound level falls the noise of the sea and wind is gone. The diver makes a short descent to the seabed at 12m below him; he can see the bottom from the surface and knows this is going to be a good dive. The environment is tranquil and the only sounds the diver hears are those made by his exhaled gas. The through water comms enable their progress to be monitored. On the bottom the reef to the East of Garvie is thick with brown kelp and the 2 meter long fronds make the diver pay close attention to ensuring that his light line to his surface marker buoy is not snagged. To be able to find his target the diver must swim down through the kelp leaves that form a floating blanket above the granite rocky seabed below. Below the kelp fronds the scene is darker but the water visibility is so good that seeing for 20 metres is not a problem. Dog fish roam the area looking for prey and large crabs bury themselves in small crevasses and sand pockets. The occasional glimpse through the kelp stalks of deeper blue water ahead indicate that the edge of the reef is close. As the deeper water looms a gully forms in the rocks and there below in the gully a shape that doesn't fit with this natural habitat. At first the colour blends perfectly with the surrounding rocks and seabed but slowly as the diver approaches the tear drop shape of a 1000 lb bomb becomes clear and defined. Excited by the initial find the diver now hopes that as he closes in the dull grey hue of the weapon turns to green rather than blue. The diver then notices the lighter faint line around the nose of the bomb – possibly a yellow band. Finally within 5 meters the weapon is clearly green in colour with a thin yellow band painted around the nose. Most definitely one of this years unexploded bombs. The parachute tail is still attached which makes it difficult to see the fuze but there is no doubt that this one will go BANG!

Carefully as briefed the diver examines the bomb without disturbing this beast of a weapon or its fuze. As the visibility is so good the diver can ascend to the surface and call in the safety boat confident he will be able to relocate the bomb when he returns to the seabed. The Chief passes a marker float to attach to the bomb.

40 minutes later and all the divers are back in the RHIB having located 5 weapons, 3 are definites and 2 are older ones but could be live ones left from last year or the year before. The marker buoys bob up and down above the targets, while Puffins Petrels and Herring Gulls mill around the Island. A further 2 waves of divers conduct searches and by mid afternoon the team have located 9 targets for prosecution. As the day moves on the tidal stream starts to pick up and the overflows and tide rips to the South and West of the Island become impressive. In OMAGH several 4lb explosive packs have been rigged and fitted with detonating cord. Detonators and safety fuze are rigged on bubble wrap float packs all ready for deployment. Jim and Willie discuss the plan for the afternoon and the lads are briefed to get lunch into them. Refuelled and refreshed the RHIB and the MIB leave OMAGH with divers and explosives. The plan is to dive 3 definite HE weapons and detonate them at one minute intervals. The dives are shorter this time and entail the diver swimming down to the bomb carrying the 4lb pack while the surface team feed out the detonating cord from a drum in the safety boat. Positioning the boat without putting too much weight on the cord is testing. The diver attaches the 4-lb pack along the body of the bomb using four sewn in cords. The whole mass of the explosive is packed into a long rectangular canvass bag. Finally the bubble wrap blobs are fitted to each piece of detonating

cord and detonators with safety fuze are taped in place. The range is checked by OMAGH both visually and by radar and a VHF Security message is repeated on VHF to warn mariners to remain clear of the area. With and all clear from OMAGH PO (D) Jim Slade directs the divers to initiate the safety fuze. Each blob is fitted with 2 pieces of fuze and 2 detonators (double deting) to reduce the probability of misfire. FUZE BURNING ! the stop watch is started. The bubble wrap blobs are placed in the water and boats retire slowly away. As they turn away to transit to safe distance the smell of burning safety fuze is thick in the air and the divers have big smiles on their faces as the engines pick up the pace. At 300m the boats turn around and point the Island. The MIB comes alongside the RHIB and stop watches are checked – 3 minutes to go. Getting the timing right is crucial and the diver that cuts a miss timed bit of safety fuze can expect some serious grief, and to have to buy a round of drinks in the bar. 10, 9, 8,7,6,5,4,3,2,1.....

The crack of the detonator and cordtex going is heard only a fraction of a second before the water at the first blob heaves into life, a huge dome of water is uplifted 20 meters above the surface and then out of the center of the dome a vertical plume explodes upward over 200 feet, the noise is deafening as 1000 lb of high explosive detonate in a fraction of a second. Yeahha ! the team are all smiles and the stop watch counts down to the next target. 2 more high order detonations destroy the remaining 2 weapons. After a safe wait period the boats return to the Island. The water is a boiled broth of seabed and black foam, stunned fish flounder on the surface and the seabirds feast on the small dead fry. The tide is now running and the water clears quickly ready for the next wave of divers.

Finally the day over OMAGH drops the diving team by RHIB back into Balnakiel Bay. Everyone is tired but content. Not everyday goes this well. An informal debrief at the Sango Sands Oasis ensures that miss timed safety fuze is accounted for and allows the Team to unwind before facing Fiona's superb dinner menu.

During their stay at Garvie this year the Divers also put on a display at the Durness Highland Games. After a dull start to the day the weather finally bucks

up and numerous children Mum's and Dad's visit the stand. The kids get to use the mine detector equipment searching for coins buried in the grass. The RHIB gets lots of attention and is an impressive crowd puller. Finally the troops take part in the Games Tug-o-War contest. Diplomacy always the strong point of the Diving community see's the boys win their first match against the Thurso Misfits 2-1, but then loose to the local Durness boys 2-0. In a play off for 3rd place a second match against the Missfits is diplomatically lost – or so the Chief says. Diver Rob Gormer also runs in the 100m, 200m and 3 mile run and impressively finishes 2nd, 1st, and 2nd. A great day is had by everyone and our bond with the local community is reinforced.

The weather has been unbelievably good for the entire trip, the hotel have looked after our every need and the operational task has been completed. 83 Dives, total dive time 2050 minutes and 30 pieces of ordnance destroyed. A veritable adventure for the boys and their toys!

# THE MINEWARFARE & CLEARANCE DIVING OFFICERS' ASSOCIATION

by Rob Hoole

The Royal Naval Mine Warfare & Clearance Diving Officers' Association (MCDOA) is open to all serving and retired RN qualified MCDOs and MWOs and officers from other navies who have completed courses in the UK. The Association was founded 12 years ago and now has over 260 members, including 113 serving officers, each of whom pays a £10 annual subscription by Standing Order.

## Aim of the MCDOA

The aim of the MCDOA is to perpetuate the "Esprit de Corps" of Royal Naval Mine Warfare and Clearance Diving Officers by the regular exchange of information and meetings on both a social and formal basis to their mutual benefit. A Newsletter called '5 Bells' is published to keep members up to date with MCD news and a website and fast-reaction e-mail link serve the same purpose for more urgent items.

## Activities

Annual MCDOA activities include:

- A Northern Dinner held at Faslane in the New Year.
- A Ladies Night held at Portsmouth in the Spring.
- An operational update followed by the AGM at Horsea Island in November.
- The Annual Dinner at Whale Island the same day in November as the AGM.

## Association Officers

The President of the Association is Captain Chris Massie-Taylor RN although he will be standing down at the next AGM when a new President will be selected. The Committee for 2002/2003 comprises:

| | |
|---|---|
| Chairman: | Cdr Simon Nicholson RN |
| Vice Chairman: | Lt Cdr Rob Hoole MBA RN (Rtd) |
| Secretary: | Lt Cdr David 'Topsy' Turner RN |
| Treasurer: | Lt Cdr Graham 'Tug' Wilson MBE RN |
| Committee 1: | Cdr David Edwards RN (Rtd) |
| Committee 2: | Cdr Mike Kooner MBE RN (Rtd) |
| Committee 3: | Cdr Frank Ward RN |
| Committee 4: | Lt Cdr Martyn Holloway RN (Rtd) |

## Applying for Membership

The Association has its own website at ***www. mcdoa.org.uk*** where full details can be found about Application for Membership as well as News, Funnies, Photo Galleries containing pictures of past courses and social activities, a Discussion Forum, and much more. Alternatively, application forms can be obtained from Lt Cdr David (Topsy) Turner, the Honorary Secretary, via:

Lt Cdr D Turner RN
Honorary Secretary
MCDOA
FOST Faslane (MPV)
Sea Training Building
HMNB Clyde
HELENSBURGH
Dumbartonshire
G84 8HL
Tel: 01436 674321 Ext 4459

# WHO SAID SIZE DOESN'T MATTER?

WSTD Tinsley
HMS RAMSEY

I am sitting at the wheel during defence watches on the Ramsey, " check fix" I hear the OOW say. At the same time I decide to check my branch badge, still a steward!!
I have been in the navy for almost six years, most of which I have spent on big ships and in retinue. Imagine my horror when I saw my draft order. My hand-over consisted of "This is the wardroom, the pantry and this is your mess". It didn't seem so different, just a lot smaller. "I can handle this." I say to myself. Everything was going fine until we went into defence watches! "What do you mean I drive the ship? I'm a steward!" "I do specials on the bridge, vehicle runs and part of ship? And you say this ship is plastic? Were all gonna die!" I said.

Months into it, I get on with my job (whatever that may be) as best as I can. It's better to have a change now and then, than to do the same thing day in day out. Whenever I find myself in an unfamiliar position, I turn it all into a joke. I often say to myself "If my mum could see me now!" The only time I can remember thinking this on a big ship was during a RAS. Picture me on the FX of a 42 destroyer, in rough seas wearing a multiflab suit, holding onto a distance line, playing tug of war with an RFA! (well, that would be how my mum would see it anyway!) At the other end of the spectrum, during OP TELIC I did manage to do a fair bit of stewarding, amongst many other things.
The visit of the prime-minister in UMM QASR took a lot of preparation (scrubbing out!) although it was a short visit, my main concern was would he remember me from when I worked for him at chequers? (apparently so!!)

To lighten the situation somewhat, the following day, we had a visit from Jim Davidson. He was making a documentary of his work with the Forces. Only a selected group of us had the chance to see him and I was one of them… I was also the only female! (Ha ha, thinks Jim, my first target!) Once he had finished asking me if I was named after 'Kerry Butter' because I spread easy! I pointed out in the nicest possible matelot way, that I was a lone female, at which point, he took hold of me and my camera and proceeded to take the Mickey out of the rest of the guys.

A lot of long hours and hard work go on in the Navy, but especially on Mine Warfare ships on a deployment. Only when the deployment is over, can you look back and say, "I actually enjoyed that!" It's always the good times you remember. (By Ed too true!)

# CAPTION COMPETITION

Poor Tommo, he hadn't noticed the WO Lobster behind him....
all that was left was his DPM jacket!

Any other suggestions to the Ed.