

Summer/Autumn 2025 #MAD2025



CONCENTRATING THE FORCE AND OPTIMISING FOR OPERATIONS



MINE WARFARE AND DIVING

FOR THE MINEWARFARE AND DIVING COMMUNITY, ROYAL NAVY

EDITORIAL

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The Mine Warfare and Diving magazine is published to serve the Mine Warfare and Diving Communities, support the MCM Conference and to raise awareness across the wider Royal Navy and Defence as to the incredible contribution made by this deeply specialist capability. This has been brought to you by COMSURFLOT MCM2 staff and we would be interested in any feedback of further editions.

Thanks must go to the many contributors that have made this magazine possible. Designed and printed by Navy Graphics, in particular Jonathan Field, with our sincere thanks.

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FOREWORD

DEDICATION, INNOVATION AND VISION



By: Captain Simon Pressdee Royal Navy, Force Commander, Patrol, Underwater Exploitation and Diving.

Welcome to the 2025 Mine Warfare and Diving Conference. As we reflect on the remarkable journey of the Mine Warfare and Diving Branches, it is with immense pride that we celebrate 50 years of dedicated service and innovation. This milestone is a testament to the resilience and adaptability of you, the members of this community, who have (over generations!) consistently risen to meet the challenges of an ever-evolving underwater threat, offering a capability that remains increasingly critical today to enable freedom of manoeuvre and increasingly, security of our Critical Undersea Infrastructure (CUI). Equally significant is the commemoration of 20 years of continuous MCM operations in the Gulf, a region where our presence has been pivotal in providing deterrence, ensuring maritime security and freedom of navigation, all delivered through your collective professionalism and determination.

Looking to the present and future, the Mine Warfare and Diving community remains at the forefront of operational excellence. Our current MCM force laydown reflects a robust and forward-thinking strategy, with a clear roadmap to meet the First Sea Lord's direction to optimise our ability to fight by 2029. This includes continued investment in our Minehunters, and expansion of our force as well as incremental integration of cutting-edge technologies which are rapidly being operationalised and exploited by the Mine Threat Exploitation Group. In order to provide a higher readiness and resilience to the Homeland and European, Atlantic and Arctic (EA2) operating areas, 2026 will see us continue to concentrate and optimise our force for NATO operations, ensuring we remain one of UK Defence's key contributors to allied maritime security, whilst also retaining the agility and reach to respond to global events.

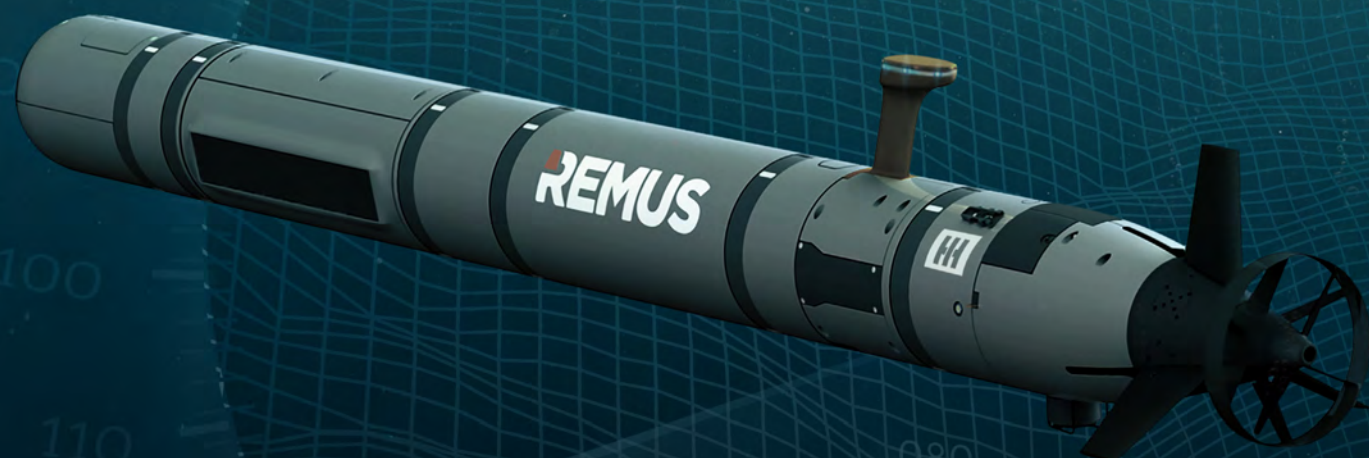
During 2025 the Interim-MCM operating model has delivered to meet an ever-increasing operational demand as we transition from conventional to future equipment. This has been demonstrated many times over but particularly by the combined MTXG/DTXG Seabed Assurance Team (SBAT) operating from MCMVs, RFA PROTEUS and other platforms to deliver a rapid response to threats in sensitive homeland waters, our sustained high readiness presence on the Clyde and in the Gulf, as well as the recent outstanding achievements demonstrated during AUKUS and REPMUS 25. All the above providing evidence of our primacy amongst our allied nations in this field.

2026 will continue to see significant investment in Minewarfare and Diving. HMS STIRLING CASTLE (STCL), arrived this year and will be a significant force enabler for MTXG. Displacing 6000 tonnes, STCL is a versatile, comfortable and modern platform which is vital to enable the progression of sustained MTXG offshore uncrewed operations. Additionally, and potentially most critically, those of you who will operate from STCL will be key to informing the design, development and procurement of the future MCM Offshore Support Vessels, which we will be operating from 2031. 2026 is your opportunity to make your voice heard and shape our future ships! For the our Clearance Divers, 2026 we will see a new Scuba Air Set trialled and procured and the start of the Mixed Gas Replacement programme, both crucial projects which will baseline our future. Investment in these and other specialist underwater equipment sets will see Naval Military Diving develop our breadth and lethality, contributing directly to the RN's Special Operations Maritime Task Group (SOMTG).

The arrival of MHC Programme Block 1 Mission Systems, coupled with the existing commercially procured equipment sets, as well as our assured conventional MCMVs, see us routinely operating a hybrid model of crewed and uncrewed systems working together. This is at the vanguard of the Royal Navy and UK Defence's approach and you are often the first to learn valuable lessons and experience that we must rapidly pass on to our shipmates and colleagues across the MoD and NATO. This is the case whether you are serving in the frontline or training our next generation in FOST or MWS.

In conclusion, as we look ahead, our vision for the Minewarfare and Diving Force is ambitious yet achievable. Following engagement across our community, the Underwater Vision 2040 will shape how we optimise our ability to fight in 2029, and redefine our specialisations and frontline organisations for 2040. This will see a continued investment in Minewarfare and Diving over the next 15 years, as well as a sharper focus on full spectrum Seabed Warfare (SBW) which will include increased lethality to deliver UW Intelligence, Surveillance and Reconnaissance (ISR), Defensive (MCM) and Offensive (Mining/Strike) operations. This will be cohered with the development of a dedicated Undersea Warfare Command, which will provide leadership and direction, as well as Tactical Command and Control within this domain, assuring continued operational success.

Thank you for your continued support and dedication to shape the future of the Royal Navy Mine Warfare and Diving.



HII: DELIVERING THE UNDERSEA ADVANTAGE

Engineered for dominance beneath the surface, REMUS 620 is the most advanced, modular, and future-ready medium-class unmanned underwater vehicle (UUV) available today. Backed by over 25 years of innovation—and with more than 750 REMUS UUVs deployed across the globe—HII is transforming autonomous maritime operations.

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We don't just build platforms—we're driving the future of naval warfare.

HII. Delivering the advantage.



Learn more

MCM CONFERENCE 2025

TIME	ACTIVITY	SPEAKER
0800 - 0820	Conference set up and final preparation	
0820 - 0850	Welcome refreshments and conference registration	
0850	All personnel to be seated	
0850-0855	Millennium Hall H&S Brief.	Lt Cdr C Miles MTXG CoS
0855 - 0900	VIP arrival and conference photo	Lt Cdr C Miles MTXG CoS
0900 - 0910	2025 MCM Conference Introduction	Capt S Pressdee RN Capt PUXD
0910 - 0925	Keynote Address	VIP (TBC)
0930 - 0950	North Atlantic Treaty Organisation (NATO); Return to Very High Readiness (VHR) and Future Black Sea MCM Operations.	Lt Cdr T Lewis COMOPS N3-SO2 MCM
0955 - 1015	Diving & Threat Exploitation Group (DTXG), Mine & Threat Exploitation Group (MTXG) and Mine Countermeasures Squadron 2 (MCM2) Updates.	Cdr Armstrong, Cdr Herridge and Cdr Hurman CO DTXG, CO MTXG and Cdr MCM2
1020 - 1040	Stand Easy	
1045 - 1105	Current Force Laydown and Vision for the Front Line (Sqn's/ Groups)	Cdr B Stait PUXD ISCM SO1
1110 - 1130	Safety Investigations and How Autonomous Technology Will be Included and Investigated.	Lt Cdr P Moonan Navy Safety - Investigations Lead
1135 - 1155	Reflection on 50 Years of the Mine Warfare Branch and 20 Years Continuous Operations in the Arabian Gulf.	Mr R Hoole RN Association
1200 - 1300	Lunch (buffet provided by HII)	-
1300 - 1320	Role of the Royal Navy Reserves (RNR) in the Wider MCM Community.	Lt Cdr T Worley XO CCF RN-RM
1325 - 1345	Data Technician Level 3 Apprenticeship Scheme Update.	WO2 S Dixon WTG MW OiC
1350 - 1410	Mine Warfare Career Pathway and Operational Conversion Unit (OCU) Update	Lt Cdr D Chandos-Hall and WO1 J Morton MTXG OCU OiC and ISCM MCM W01
1415 - 1435	Development of the Mine Warfare Battle Staff (MWBS) and What the Future Holds.	Cdr R Couzens Cdr MWBS Red
1440 -1500	What is SBAT (Seabed Assurance Team)?	Lt Cdr C Barber CO MTXG YU2
1505 - 1520	Cdr Panel	All Available Cdrs and WOs
1525 - 1545	Closing Address	Capt S Pressdee Capt PUXD



50 YEARS OF THE MINE WARFARE

By: Lt Georgina Thornton-Barter RN SEO, MWBS(Red)
Contributors: SLt Sophie Marples RN

One might be forgiven, if they had been living under a rock, that reading '50 years of the Mine Warfare Branch' meant that the use of, or even the concept of mines did not exist pre-1975. Naturally, we all know that this was not the case. It was a consequence of the American War of Independence when David Bushnell invented the first sea mine (NRC, 2000) which consisted of a wooden keg, gunpowder, and a primitive contact fuse. Despite the fact these mines were not reliable, they started an enduring legacy- the psychological and physical deterrent of ships in confined waters. Despite these mines being used against Britain, come World War One when the allies laid over 70,000 in the North Sea and close to the English Channel, it was the Brits who lead the way in Mine Countermeasures (MCM) tactics. Mine Warfare would endure throughout the 20th century, with two WW1 vintage mines damaging US warships during Operation Desert Storm in 1991.

Historically, responsibility for mine warfare lay with Torpedo & Anti-Submarine (TAS) ratings & officers. After time under a similar guise under the seamanship branch, the Mine Warfare Branch (MWB) received its own identity within the wider Operations Branch on 1st January 1975. This coincided with an internal document produced by the directorate of naval plans publishing a concept for future Mine Countermeasures. It established five objectives for the UK MCM force;

- A) To preserve the credibility of both the RN and the USN Polaris forced based on the Clyde
- B) To clear the principal channel and east coast reinforcement routes
- C) To ensure safe passage of UK and allied shipping entering and leaving the Western Approaches
- D) To assist in maintaining the use of naval bases
- E) To assist in maintaining the use of other ports for economic survival

The threat? The USSR, and their world-largest stockpile of mines, at over 400,000 pieces of ordnance. This same future concept paper identified that in one deployment, the Soviets could lay 950 mines across the UK and Northern Europe.

The conclusion? "The RN must now rapidly improve its active MCM fleet."

At present, in the 3rd decade of the 21st century, the mine warfare space is heavily focussed on technology. Back in the 70s, this was also the case in a world-first glass reinforced plastic (GRP) warship. HMS Wilton was a Ton-class minesweeper & minehunter, but the only one built with GRP. It was effectively an experiment, a prototype, to establish if the material would suffice in warship design. It was deemed a success and that would lead to the Hunt-class being ordered for the navy, and on the 21st June 1978 HMS BRECON was launched becoming the largest plastic warship in the world. 1979 saw hovercraft, then operating under the Royal Naval Hovercraft Trials Unit, involved in unexploded ordnance disposal on the Dengie Flats on the River Thames. HMS LEDBURY would be the second ship of the class and in 2025 is the oldest operational warship in the fleet. A Navy News article of 1980 stated an intention to commission as many as 24 Hunt-class vessels, although in the end, only 13 were produced.

Coverage of the Falklands War often focuses on air warfare and amphibious operations. You might believe that Mine Warfare was absent from that conflict, and whilst it may not have been headline-grabbing, it had a worthy part to play. However, at the start of the conflict, there were no MCMVs available to join the Operation Corporate task group. The Ton-class were deemed too small and fragile to make the transit South, whilst the only two Hunt's even remotely available- BRECON & LEDBURY- required modification, trials and work-up. As a result, the Minesweeping Auxiliary (MSA) was formed. This was a flotilla of five trawlers taken up from trade which were converted for use as minesweepers in the Falklands. They were the NORTHELLA, FARNELLA, JUNELLA, CORDELLA and PICT. They formed the 11th MCM Squadron, were all crewed by regular RN MCMV crews, and were the only ships taken up from trade permitted to call themselves 'HMS'. They proved valuable to the conflict, sweeping a total of 10 mines in a minefield east of Cape Pembroke light. Three weeks later, BRECON & LEDBURY arrived in theatre and themselves proved valuable in locating and surveying HMS COVENTRY, clearing unexploded ordnance on ANTELOPE & ARDENT, cleared up to 10 more mines and conducted route survey around the Falkland Islands. Ultimately, two significant and overarching recommendations would be made regarding MCM from the Falklands War; that in the pre-assault phase, a fast, conventional MCM system should be developed which can be towed by a helicopter or small craft of opportunity when required- and in the post-assault phase, that adequate MCM assets are immediately available especially if the threat of aerial mining exists.

1990 & 1991 would see The Gulf War, which would be the trigger for an enduring MCM presence in the region. 13th August 1990 would see CATTISTOCK, HURWORTH & ATHERSTONE sail from the UK eastward, initially for service in the Mediterranean. HMS HERALD, too, would be deployed as support ship to the MCM2 ships. Come Autumn, they were in the Gulf and would be joined at the beginning of 1991 by LEDBURY and DULVERTON. These five ships would prove invaluable throughout the conflict, including escorting the USS Missouri, now a museum ship in Hawaii, ensuring she stayed afloat. BICESTER, BRECON & BROCKLESBURY would eventually follow, relieving the original three MCMVs, although the war would be over by the time they arrived.



HMS HURWORTH



HMS ABDIEL

History will see the Hunt's providing exemplarily service in the Gulf war, but back in the UK the next evolution of mine warfare platform was in the water and making strong strides. HMS SANDOWN, first of class, was commissioned on the 9th of June 1989 and would spend the next two years conducting trials. She was built with accuracy and control in mind, with cycloidal Voith Schneider propeller units and bow thrusters. Her aim- to provide a deep-water capability. Summer 1993 would see the fifth Sandown, the last of the original batch of 5, HMS BRIDPORT handed over to the RN and joined the 3rd MCM squadron based in Rosyth. Such success would see the final two Ton-class MCMVs based in Rosyth decommissioned- SHERETON & BRINTON - leaving just NURTON & WILTON in service.

In the latter half of the 20th century, minesweeping and hunting was not exclusively a trade undertaken by full time regulars. The 10th MCM Squadron was wholly operated by RNR sailors, who had ships which were entirely operated by them. Two of said ships were HMS ST DAVID and HMS VENTURER who were ex-trawlers built in the 70s and were on charter to the RN (Navy News, March 1980). They were operated by MCM10 with the mission of developing deep minesweeping techniques. The squadron would also take custody of the River-class minesweepers (not to be confused with today's batch 1s), 12 in total, which would form the backbone of their fleet. Each ship had a complement of 26, and in addition to their weekend training, the squadron would deploy as a whole for NATO exercises around the UK and Europe. In March 1994, 30 years after the squadron was formed, it was disbanded under an RN "reorganisation" which would see the RNR personnel integrate into the regular MCM squadrons where required. A number of the River-class transferred to the Northern Ireland Squadron and others were put up for sale.

Mine Warfare training will now be associated with HMS COLLINGWOOD, but it is perhaps not as synonymous as HMS VERNON was with MW. As well as being the base for Seamanship & Diving training, VERNON was responsible for the training of all MW ratings (as part of the Operations branch) in countermeasures, and the preparation and deployment of mines. Seaman divers would also attend VERNON for 13 weeks after a stint at Raleigh, learning to dive safely to a depth of 55 meters. In 1980, an average of 40 sailors would pass one of the five courses a year (Navy News, Nov 1980). VERNON was also the base for the 2nd Mine Countermeasures Squadron, which today can be found in HMNB Portsmouth, 2-basin. The motto for the former home of mine warfare was "Vernon will always live forever". Another former MCM squadron home was HMS COCHRANE, Rosyth, which in 1980 was home to over 2,000 sailors and their families. As well as the 1st MCM squadron, it was home to fishery protection vessels. They would leave in December 1995, The Hunt-classed MCM1 would find Portsmouth to be their new home, and the Sandown-classed MCM3 would move to Faslane.

As mentioned above, mine warfare ratings received training in minelaying- although today, this is firmly a historical capability. In 1977 the MOD penned a paper which stated that back in 1957, the UK deserted focus from minelaying capability firmly to MCM as the priority. It was determined, in 1977, that defensive mining would be prudent- in order to protect submarine bases. At the time, the only ship which could lay mines was HMS ABDIEL at a capacity of 44. However, over time, financial pressures and changing priorities determined that minelaying was often better achieved from the air- minelaying from a ship was slower, overt, and overall, more vulnerable. Combined with the threat from the Soviets- focus changed to countering mines, rather than laying them.

In 2025, it seems an age ago to consider that these vessels were once the pinnacle of minehunting capability, and now only one Sandown remains and five Hunts. Only as 'recently' as 2010, the Strategic Defence and Security Review 2010 published a 'fact sheet' on the Royal Navy by 2020 which stated 15 MCMVs, with 'future MCMVs' using a common hull and modular design for future mine warfare operations. By 2015, the plan by 2025 was to have 12 MCMVs, and by 2021, the government of the time published a paper titled "Defence in a Competitive Age" which placed the focus on an "automated Mine Hunting Capability (MHC)" toward an objective of maintaining an underwater advantage. "The Royal Navy will retire Mine Counter Measures Vessels as these new capabilities come into service."



An unmanned autonomous mine countermeasure trial has been conducted from HMNB Clyde.

A CELEBRATION OF 20 YEARS OF MCM OPERATIONS IN THE GULF

By: Lt Georgina Thornton-Barter RN, SEO MWBS (Red) Contributors: SLt Sophie Marples RN

RNMB HARRIER operating out of UKNSF



RFA CARDIGAN BAY was used as an AFSB to support and sustain MCM operations

For two decades, the Royal Navy has maintained a fully deployable Mine Countermeasures (MCM) force in the Arabian Gulf, operating at readiness to ensure maritime security in one of the world's most strategically vital regions. This enduring commitment has safeguarded freedom of navigation and set the standard for deployable MCM operations around the world.

Since 2007, the Royal Navy's MCM presence in Bahrain has been unwavering. This presence was initially through the deployment of two Sandown-Class ships, which were later joined by a number of Hunt-Class Minehunters. With the introduction of the Afloat Forward Support Base (AFSB) provided by a Bay-Class auxiliary ship, operations could then be sustained at sea through the provision of food, fuel, engineering assistance and ammunition. The AFSB also provided a platform for the Mine Warfare Battle Staff (MWBS) to operate from, to provide the Command and Control (C2) element of MCM operations.



Two minehunters rafted together alongside in UKNSF

Much has changed since then, with the integration of multiple Force Elements. The establishment of the Mine Threat Exploitation Group (MTXG) in 2022 provided a structure for the continued development of autonomous and Uncrewed Underwater Vehicles (UUVs). These technological advances mean processes to identify and classify mines are becoming more varied, while the Diving Threat Exploitation Group (DTXG) continue to provide the traditional diving capability often associated with mine hunting. The movement towards autonomous and uncrewed equipment will enable MCM operations to be conducted at range and remove personnel from the minefield. This is not without its threats, however, already we are seeing the impacts of GPS jamming in hostile regions and in an uncertain geopolitical sphere there will inevitably be new and ever-changing challenges.

With RFA CARDIGAN BAY returning to the UK in 2024 without a relief, MWBS underwent a relocation, changing processes and procedures in order to maintain continuous C2, providing regional stability and meeting the operational demand while working at a wider range from the Force Elements.

It is not only the operating Force Elements that have changed in this time, but also supporting units, such as the Forward Support Unit (FSU). This team consisting of engineers and logisticians are forward deployed and readily available to support the aging platforms. FSU have been pivotal in keeping Minehunters (and more recently the T23s) operational, often providing innovative solutions to both engineering and stores issues.

Throughout its time in the Middle East, the MCM Force has worked in close coordination with numerous allied and regional partners. This has included working closely with the US Combined Task Force (CTF) 52, as well as integration into the US' 5th Fleet C2 Construct as CTG 52.2. Through participation in multinational exercises and training opportunities, the UK has strengthened ties with Gulf nations and solidified interoperability.

As we reflect on the last 20 years, we ask ourselves what does the next 20 years hold for MCM operations in the Gulf? How will technological advances and changing warfare tactics shape both the geopolitical atmosphere and the ways which we conduct MCM operations? When asked this, Lt William Hagenbuch, the Operations Officer deployed with MTXG said 'With the speed at which technology is advancing, it's a fascinating position to be in and ever changing. As seen in 2025 already, the Gulf is a very dynamic environment, dealing with the ever changing political, environmental and technological challenges on daily bases has proved to be brilliant training for the team'. Work with partner nations will also continue to be at the forefront as we move into the 'Age of Autonomy'. 'Understanding the performance and capability of autonomous equipment, [will] enable us to remove people from the minefield and conduct MCM [operations] at a range, it is important to understand multinational autonomous missions and tasks through UUVs and Uncrewed Surface Vessels (USVs)' said Lt Cdr Joshua Beale, Chief of Staff, MWBS(Red).

**As we reflect on the last 20 years,
we ask ourselves what does the next
20 years hold for MCM operations in
the Gulf?**



HMS MIDDLETON working alongside RFA LYME BAY

MCM IN-SERVICE CAPABILITY MANAGEMENT

By: W01 Joe Morton – MCM Inservice Capability Management W01

// Capability delivery has informed the process to ensure equipment delivery has met the rapidly shifting operational demand. //



The MCM In-Service Capability Management (ISCM) continues to deliver a range of projects across the fleet whilst sustaining operational readiness across legacy platforms

There remains challenge in the rapid integration of cutting-edge technologies remains due to policy and training requirements. Yet the incremental approach towards capability delivery has informed the process to ensure equipment delivery has met the rapidly shifting operational demand.

Hunt Class Optimisation Programme (HOP)

The HOP is delivering tailored support periods for the HUNT Class, aiming to better balance MCMV availability and maintenance requirements until their out-of-service dates at the end of the decade. This will be achieved by replacing lengthy Support Periods (Docked) with shorter, targeted interventions.

This shift is unlocking significant benefits, including improved material state and better maintenance alignment, it is already yielding results.

MCMV recovery from Op KIPION

In April, HMS CHIDDINGFOLD returned from over two years deployed in the Middle East, supporting regional operations. Her recovery was successfully conducted via a chartered civilian heavy-lift vessel, a unique and challenging serial which drew support across a range of agencies to achieve.

This successful demonstrating the effectiveness of strategic lift solutions in reducing operational risk and alleviating strain on personnel and resources.

The first Capability Insertion Period in 2024 saved approximately £3 million and six months of availability. Key upgrades, such as replacing fridge plants, have boosted onboard efficiency and sustainability. Additionally, the refurbishment of Junior Rates' accommodation has significantly enhanced living conditions and morale. Which is supported by the enhancement of WiFi connectivity enabling high-speed access throughout the vessel.

Now as a proven concept, the onward intention will be to recover HMS BANGOR and HMS MIDDLETON via the same method, with a focus on returning both ships to operational tasking at the earliest opportunity.

VideoRay Defender

The VideoRay Defender (VRD) is a highly capable and portable Remotely Operated Vehicle (ROV), extensively used by Mine Warfare and Diving teams for seabed exploration, harbour infrastructure inspection, and hull searches of ships and submarines.

After a prolonged period without in-service support for DTXG's VRD ROVs, the ISCM MCM team successfully secured funding for annual servicing and formal training through 2027, with further funding identified for continued support.



VideoRay Defender ROV Support

To refine this capability further, engagement continues with Navy Develop to provide DTXG with a remote stand-off EOD weapon system.

KRAKEN MinSAS payload integration

MTXG X-Ray Unit 3 has led the integration of the KRAKEN MinSAS, a man portable Synthetic Aperture Sonar REMUS UUVs.

Following a focused training period, X-Ray 3 deployed to NATO Exercise REPMUS, collaborating with allied nations to refine MCM autonomous systems concepts of use and enhance interoperability.



The KRAKEN MinSAS, fitted to the REMUS 100 UUV, delivered highly detailed acoustic imagery, enabling rapid and accurate post-mission analysis (PMA). The team used this deployment to refine standard operating procedures and develop future integration plans for REMUS 300 UUVs, which will significantly enhance mission effectiveness.

HMS STIRLING CASTLE

Acquired in 2022 and originally crewed by Royal Fleet Auxiliary, STIRLING CASTLE has transferred to the Royal Navy as HMS STIRLING CASTLE, crewed by MCM2 Crew 6. The ship plays a pivotal role in the Royal Navy's transition from MCMVs to MCM Support Vessels capable of deploying autonomous systems. This marks a significant step forward in modernising mine countermeasures to meet future seabed challenges.

Over the next 12 months, the MCMV crew will commence sea training and begin embarking Maritime Autonomous Systems (MAS) to support a range of activities, including training, trials, and Defence tasking. This phased approach will ensure crews are fully prepared to operate alongside autonomous systems, enhancing operational flexibility and supporting the transition to next-generation mine countermeasure capabilities. The ship will also undergo several capability upgrades to facilitate the deployment and operation of MHC systems.

Future projects

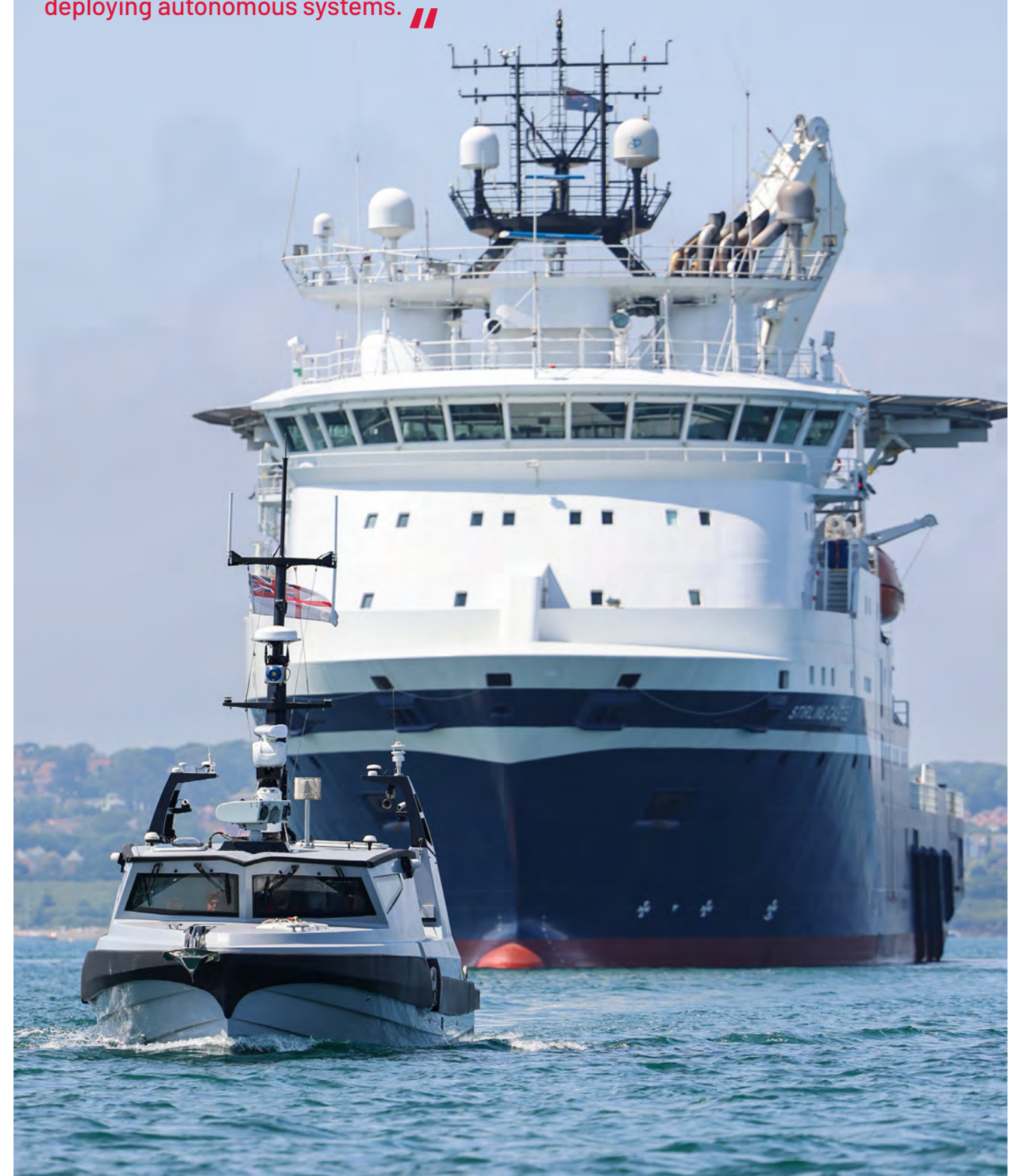
Finalising the support contract with HII for the REMUS UUV fleet, to ensure sustained support for both REMUS 100 and REMUS 300 systems.

Engagement with Navy Develop to secure a support contract with Teledyne for the GAVIA UUV fleet, strengthening MTXG's deep-water operational capacity.

Collaboration with DE&S to deliver an Inflatable Launch and Recovery System for deploying and recovering UUV from MCMVs or Vessels of Opportunity.

Providing MTXG with a lightweight mine shape for use as an autonomous system sonar training target.

// The ship plays a pivotal role in the Royal Navy's transition from MCMVs to MCM Support Vessels capable of deploying autonomous systems. //



HMS STIRLING CASTLE accompanied by latest Uncrewed Surface Vessel

REVIEW, REFORM, AND REPRIORITISATION

By: Cdr Hurman RN, Cdr MCM2 and Lt Cdr Bailey RN, COS MCM2

What a year; I can't believe 12 months have passed since penning last year's update. Some themes remain familiar but as a collective we have worked tirelessly to deliver and a lot has changed, some in the background and some more obvious.

You all will have seen the **MCM2 Vision** and it provides the perfect framework to highlight and update you (the people making it all happen) our challenges, achievements, and future intent.

Strategic & Operational focus, and priorities, have shifted from the forward deployed Op KIPION presence to consolidating UK Homeland Defence and enabling/protecting the CASD, renewed focus on NATO (in the face of increased Russian aggression), and generating a truly expeditionary blended MCM capability.

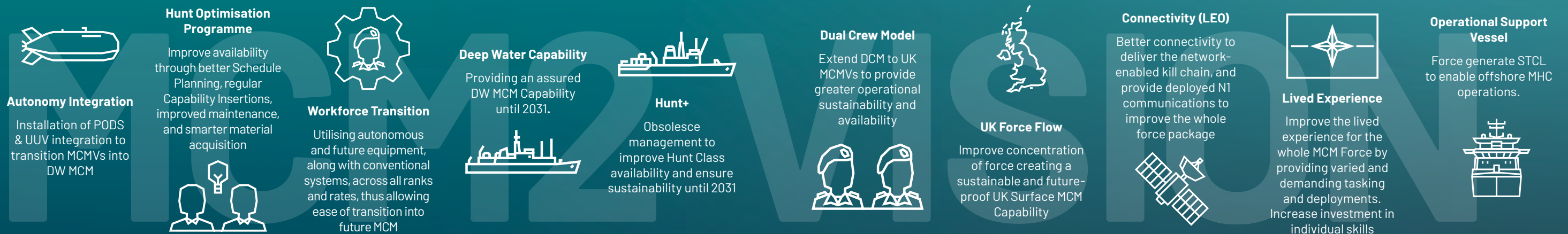
CHID has been put into extended readiness to provide essential spares to combat the obsolescence issues increasingly impacting the 40+ year old platforms, complementing the **Hunt+** initiative to create solutions to improve reliability, availability, sustainability and ultimately operational readiness and choice. **The Hunt Optimisation Programme** has been approved to support the above tenets by better schedule planning, regular Capability Insertion Periods (CIP), improved maintenance, and smarter material acquisition. This is ultimately to give us greater control to meet the RN demands and avoid the significant delays experienced by HMS BROCKLESBY (BROC) and over running maintenance.

BNGR has been extended for five years to provide an assured **Deep Water Capability**, primarily in support of CASD but also to enhance the capabilities utilised in the broader use of the surface MCM force in conducting and supporting Seabed Warfare.

In Op KIPION assets from across all the PUXD portfolio were used to shadow and monitor the Yantar, hosting and supporting embarked teams from DTXG and MTXG to conduct searches and checks of the integrity of CNI. The capability and flexibility of the Hunts was particularly instrumental in completing this mission.

This year has seen a leap in autonomy integration with the successful installation and operationalisation of the Navy Persistent Operational Deployed Systems (PODS) on HMS LEDBURY (LEDB). This furthers the aim of **Autonomy Integration**, to integrate UUV capabilities to transition surface MCMVs with an enhanced DW capability. Fitting and using these PODS will continue to inform the MHC project as we transition through the blocks, choosing, trailing, developing, and bringing into service the future capabilities.

// This year has seen a leap in autonomy integration with the successful installation and operationalisation of the Navy Persistent Operational Deployed Systems //

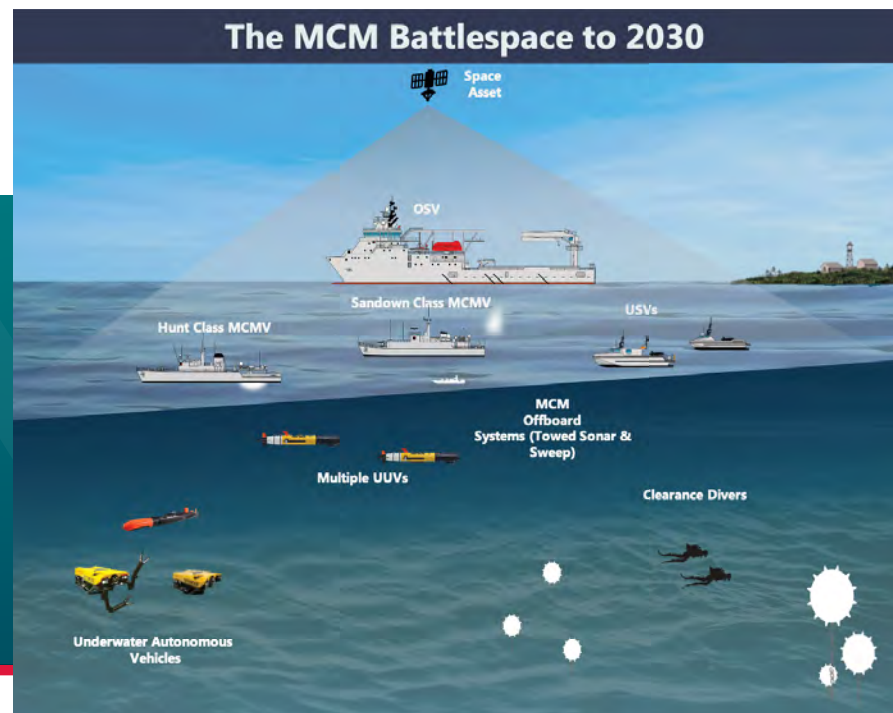


Driving much of this is of course the ongoing transition from the assured legendary (I mean legacy) surface MCM capability we continue to maintain, which currently remains the only end to end assured complete detect to dispose capability in the RNs Orbat; to the merged capabilities and the eventual fully autonomous future. You will quickly see that many of the elements of the MCM2 Vision are intertwined and interdependent to maintain, deliver, and inform current and future capabilities.

To create and future proof a sustainable MCM surface capability until the forecast OSDs in late 2020s, early 2030s, we have enacted the return of HMS CHIDDINGFOLD (CHID) and BANGOR (BNGR) from the Middle East to concentrate **UK Force Flow**. HMS MIDDLETON (MIDD) is likely to follow in early 2026.

The visit to UK sensitive water by the Russian Yantar (an intelligence gathering ship with specific underwater capabilities) generated a strong operational demand signal. The Yantar presented a real and credible threat to UK and international undersea Critical National Infrastructure (CNI) such as communication cables and energy infrastructure both of which are essential to economic and information prosperity. The RN's operation coalesced multiple niche elements from the MCM cadre and saw acceleration of the lessons identified as a result of the CHID/BNGR allison and rapid introduction of an interim deep water capability.

A significant milestone in this was the transfer of HMS STIRLING CASTLE (STCL) as the first iteration of the **Operational Support Vessel (OSV)**. RFA workforce challenges resulted in STCL being laid up for a significant period after purchase. Transfer to the RN has bought her back to life and will soon result in a platform available to support MTXG operations and MHC trials. The importance of this work in identifying lessons for bringing into service the new OSV from 2029 cannot be underestimated. Lessons on crewing and operating MHC assets learnt now will streamline their introduction as the sun sets on Hunt and Sandown capabilities.



MCM Surface Orbat Ensure the force laydown is relevant and credible to deliver the future operational requirements

To further enable this, we are driving to improve **Connectivity** to deliver the network-enabled kill-chain and deployed N1 communications to improve the whole force package. This looks like the increased use of Low Earth Orbit (LEO) such as StarLink/Shield to increase bandwidth and complement our existing communication systems.

All this process and material change is for nought without our capable and incredible people. To keep them engaged and valued we are striving to improve the N1 experience. This is against notable workforce challenges across all cadres and branches. The **Dual Crewing Model (DCM)** has been extended across UK MCMVs operating in the Very High Readiness duty roles to provide greater operational sustainability and availability. It also provides stability to personnel to plan lives better, with increased consistency in scheduled downtime.

We are working closely with the Maritime Operations Centre (MOC) to improve the **Lived Experience** for the whole MCM force by providing varied and demanding tasking and deployments. The include greater opportunities for N1 visits and in due course an aspiration to increase NATO activity (headmark of mid 2026). This includes greater investment in individual skills, the reinvigoration of the Apprentice Schemes, the Pan Defence Skills Framework (PDSF), creation of new MW career and promotion paths and taskbooks (AB-PO), and Command Qualification process to support personal career development and greater operational capability.

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The Dual Crewing Model (DCM) has been extended across UK MCMVs operating in the Very High Readiness duty roles to provide greater operational sustainability and availability.
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 It also provides stability to personnel to plan lives better, with increased consistency in scheduled downtime.
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Rest assured **Workforce Transition** utilising autonomous and future equipment along with conventional systems, across all ranks and rates to ease the transition into future MCM is deeply rooted in the decisions being made to ensure that your future is bright, achievable, and fair.

At the time of writing MCM2 has 10 crews and 8 ships of 3 classes (6 Hunts, 1 Sandown and 1 Operational Support Ship). There is some irony that as an organisation and capability that is considered in some areas to be obsolete and no longer relevant that we have grown in workforce, platforms, and capability. Our importance and ability to conduct the broad and niche operations that have come to the fore in the past 12 months is testimony to our relevance. We still have an important part to play, we may be managing decline but actually it is just transformation, MCM2 (or a version of) will be here to stay. All of the aforementioned has ensured and confirmed that the **MCM Surface ORBAT** remains relevant and credible to deliver future operational requirements.

LIFT THE SHIP: THE RETURN OF HMS CHIDDINGFOLD

By: Lt Si Morris RN Executive Officer, MCM2 Crew 1

Following successful completion of our force generation in the UK, and successfully deploying on to the Gulf to take over HMS CHIDDINGFOLD (CHID), MCM2 Crew 1 were faced with a challenge that vastly contrasted the rigours of BOST – how to lift a ship.

Unlike the successful charity fund-raising events we were posed the question on how to return an MCMV from Bahrain to the UK without using power, engines or having any crew embarked. The meant undertaking a massive planning and engineering effort whilst balancing operational output for contingency operations to ensure a first of class project to return the “Cheery CHID” back to base port.

Having sailed out to the KIPION JOA during the COVID-19 pandemic in 2020, CHID completed years of high intensity operations, reacting to the fluid geopolitical context in the middle, and maintaining a continuous MCMV presence until earlier this year. To expedite and efficiently return her to base port the plan emerged to use a ship lift, in this case the ROLLDOCK STORM – a commonly used commercial option for moving ships (mainly yachts!) from one port to another.

On Crew 1's arrival into theatre in Nov 24, work was focussed for CHID to deliver capability to COMUKMCMFOR following a period alongside. After defect rectification for both ME and WE departments including sea trials, CHID was soon back in service working to trial MTXG's REMUS 300 from Hunt class MCMVs and continue to improve interoperability. After helping to create SOPs for stationary REMUS operations, greatly enhancing sustainability for the embarked team and enjoying Christmas alongside, CHID was tasked with the recovery of a US UUV in the gulf. Making best speed to the last known datum, Crew 1 were able to recover all items from max depth efficiently and return them to Bahrain before celebrating New Year's Eve in Dubai. In a short period, the Crew witnessed a 'zero to hero' transformation from static platform to achieving on operations, capping off the last of CHID's operational running making the most of the lived experience ashore.

Shortly after another period of MTXG trials and integration, Crew 1's main effort began preparing CHID for her return home. A whole crew/whole ship effort to enable this unusual return soon kicked into to gear with ME and WE departments yet again putting in huge effort to meticulously isolate, decommission, empty and preserve equipment for CHID's five week return journey. A regular drumbeat of a busy jetty of stores returns, sullaging, cleaning, crange continued for three weeks to ensure CHID was in the correct condition to transfer and lift to the ship lift. With thorough communication throughout the planning cycle, ROLLDOCK STORM – a semi-submersible lift ship – would berth in Bahrain using a ramp/deck design to allow ships to sail in once submerged down to a maximum depth of 12.5m. In Feb 25, CHID cold moved onto the heavy lift ship with a skeleton crew embarked and was sealed up after as the Crew stepped off lowering the White ensign for her transit. CHID returned to base port in Apr 25, 5 years after her last major docking period after a short stint with MCM2 Crew 6, she was back with MCM2 Crew 1 ready for her next step into extended readiness.

This was one of the many tasks of a non-routine nature that are undertaken by the MCMV community that provide flexibility and options to defence.



A NEVER-ENDING STORY: HMS BROCKLESBY SPD AND GENERATION

By: Lt Nicholas Kidd RN - Operations Officer, HMS Brocklesby

In July of last year, Second Mine Countermeasures Squadron Crew 2 (Crew 2) returned from their third and final Op KIPION deployment in Bahrain, swapping high-tempo deployed operations for the new, and extremely different challenge of generating HMS BROCKLESBY (BROC) out of her Docking Support Period (SP(D)). The following 12 months included supporting the tri-service Op LAZURITE, ceremonial and affiliate support, the balancing of Crew 2's own training and generation with the support to other MCM units and wider RN activity and adapting to a multi-agency approach working with civilian and other naval organisations.



Commitment and collaboration

The crew have not been alone in driving to get BROC back to sea. It has been a collaborative effort from a wide range of organisations and teams, who have all worked tirelessly over this extended SP(D) to return her to operations. A close relationship has been required between the Ship's Company and BAE, the prime contractor. Unlike a traditional refit, the SP(D) model requires a combined approach between Ship's Staff and the contractor throughout, collaborating on the management of stores, maintenance, and defect rectification. The teams at BAE and DE&S, responsible for the material regeneration of BROC, have fought through countless challenges to get her to where she is now. Similarly, a wide range of assurance organisations have been crucial to the generation effort, namely FOST, MCTA, Navy Safety Centre and PSYA have all contributed their expertise to ensure that Crew 2 and BROCKLESBY are ready for any challenge that could come our way. This has involved inspections of all departments, covering material and administrative aspects, needed for the crew to operate safely and effectively, initially alongside and working towards returning to sea.



During the last year, over three quarters of Crew 2 have embarked in other ships or supported operationally essential requirements ashore. //



Whilst the efforts to get BROC back to the front line have been commendable, there is no escaping that fact that the project has experienced significant delays. Challenges ranging from sourcing parts compatible with the four decade old platform to wider infrastructure issues which delayed re-floating the Ship have all combined to extend the project well beyond its initial forecast duration. As a result of this, more and more of the Crew's experienced sailors who completed the last deployment have departed for pastures new. Whilst the fresh faces have brought new energy and ideas, training, and integration to ensure the new team is ready to meet the requirements to move on board and prepare for sea has been the major focus for the Crew during the time based in the SP(D) offices.

Training and improving

2025 so far has seen a constant stream of training being delivered across the country to keep the crew sharp, as well as training the more junior sailors, giving them an introduction to life at sea. This has included time spent at HMS RALEIGH - where half the Crew refreshed their skills in seamanship and CBRNDC skills, including time spent in the realistic firefighting unit and the damage repair instructional unit (DRIU). Departments have also conducted their own training alongside their regeneration efforts. Making use of the array of simulators available within the RN, the Marine Engineering department conducted regular switchboard and Ship's Control Centre training at HMS SULTAN, while the bridge team and MW used the simulators at HMS COLLINGWOOD to refresh and enhance their specialist skills. The firefighting unit, DRIU and command & control simulator at PHOENIX have also been regularly visited, with a rolling programme of training taking Crew 2 up to her ready for sea date.

All the ships in MCM2 Squadron have been extremely helpful in providing training time to our sailors and the support from our sister ships illustrates the camaraderie and Squadron mentality which makes the MCM community unique. Crew 2 were lucky enough to embark 15 people on board HMS HURWORTH. Cheekily referred to as 'OP SWAP', we spent over a week at sea, conducting damage control exercises, honing mine warfare skills, conducting navigation training, engineering drills, and building team cohesion. A vital part of this training has been allowing individuals to pursue their own advancement so as not to be disadvantaged by the delays in getting BROCC back to sea. Four sailors were lucky enough to receive their AB1 advancements alongside two receiving LS&GC badges from Capt PUXD during a recent visit. A proud moment for the recipients and for the Crew as a whole, recognising both individual hard work and collective support to developing our people, despite the challenging circumstances.



Deploying and developing

During the prolonged period without a ship of our own to operate, the Crew have inevitably been called upon to support wide ranging personnel requests, often at extremely short notice. During the last year, over three quarters of Crew 2 have embarked in other ships or supported operationally essential requirements ashore. It is testament to the continued professionalism and motivation of the team that whenever called upon, those required to deploy elsewhere have excelled in the roles they have taken on. We have supported every single sister Hunt MCMV at sea in tasks including generation, FOST training, deployed operations, and national tasking, as well as some notable time outside of the mine-warfare realm. An ET(CIS) deployed with the Italian aircraft carrier ITS CAVOUR to conduct the NATO exercise MED STRIKE, providing assurance to the UK Carrier Strike Force. A member of the catering department travelled to Singapore to ensure HMS SPEY could deliver her seagoing and defence engagement programme. The WEO deployed to the Falklands for six weeks with HMS FORTH.

Perhaps most unusually, in Sept 24, Crew 2 deployed in support of the tri-service Op LAZURITE. Army, civilian and RN personnel combined to support Entitled Personnel (EPs) in their journey to settling in the UK. Crew 2 sailors undertook a wide range of tasks well outside of their usual areas of expertise, ranging between supporting civilian teachers delivering lessons, facilitating medical appointments, conducting routine administration, and assisting EPs throughout the Camp. Civilian staff commended the tangible sense of energy the team brought to this vital and unusual task and those who conducted the Op found the experience professionally challenging and personally rewarding.



Celebration and ceremonial

No period alongside would be complete without ceremonial duties and BROCC's SP(D) has been no different. Drawing our name from the Brocklesby Hunt, most of our affiliated organisations are based in Lincolnshire, not a traditional naval stronghold but one in which strong affiliations exist. Our Sailors visited Cleethorpes Pier Garden to unveil a new statue paying tribute to our brave predecessors from years gone by. A large delegation led the Grimsby Remembrance Parade in 2024, accompanied by serving and former members of the Armed Forces, Cadets, and marching bands and subsequently enjoying the hospitality of the veterans and dignitaries in the Navy Club in Cleethorpes. The Gunnery Officer also attended wreath laying ceremonies at Earl of Yarborough Private Church as well as one at Humberside Airport for 166 Squadron whilst the CO represented the Crew at West Lincolnshire District Council events. The whole Crew are excited about the prospect of repaying the hospitality shown by our friends and affiliates when we return to sea.

The end in sight

During an extended and, at times, frustrating SP(D), Crew 2 have shown that willingness to lean into supporting other ships and tasks can pay dividends, not only providing wider Service benefit but in keeping our collective skills sharp and developing individual crew members. The vital contribution to the success of other units and operations by Crew 2 sailors is a source of pride and has been especially important in maintaining the Crew's identity and reputation for delivery forged by successive deployments over previous years. The adaptability of the team has enabled the Ship's Company to adopt the enterprise approach, integrating with BAE to work collaboratively in delivering BROCC back to the front line. Despite the numerous and inevitable challenges of bringing a 40-year-old ship back to operations, what has at times felt like a never-ending story is approaching its long-awaited conclusion, and everyone involved in the project is excited at the prospect of seeing M33 back at sea.



“The vital contribution to the success of other units and operations by Crew 2 sailors is a source of pride and has been especially important in maintaining the Crew's identity and reputation for delivery forged by successive deployments over previous years.”

Merging tradition with innovation: the future of mine countermeasures

By: Lt Max Renouf RN

As the Royal Navy looks to the future of Mine Countermeasures (MCM), it is essential to understand what current technology can achieve and how it can be integrated with the rapidly evolving landscape of autonomous systems and undersea warfare. Over several weeks, MCM2 Crew 3 (M2C3), embarked in HMS LEDBURY, in collaboration with the Mine Threat Exploitation Group (MTXG) and various shore-based support elements, explored just that – merging today's tools with tomorrow's possibilities to revolutionise Mine Warfare operations.

For over four decades, MCM operations have followed a broadly consistent model: detection, classification, identification, and prosecution of threats. This traditional approach typically requires the physical presence of an MCM platform within a Mine Danger Area (MDA), relying on Hull Mounted Sonar, Clearance Divers, or Mine Disposal Systems. While effective, this method is time-intensive, workforce-heavy, and places vessels and crews at significant risk.

A paradigm shift in mine warfare

National Tasking during the spring of this year marked a notable departure from this convention. With MTXG embarked and multiple next-generation REMUS systems deployed, M2C3 demonstrated that a single MCM platform can operate multiple autonomous capabilities in parallel. REMUS (Remote Environmental Monitoring Units) are Autonomous Underwater Vehicles (AUVs) designed for broad-area surveys, capable of detecting and mapping underwater threats with high precision. This integration dramatically increased the area covered and reduced time-on-task, enabling HMS LEDBURY to complete over 100 SEAFOX runs and 375 nautical



LEDBURY STBD Quarter



Pods Interior



Pods and Seafox

miles of REMUS survey missions in just over two weeks. SEAFOX, a remotely operated mine disposal system, was used to reacquire and classify targets identified by REMUS, showcasing a dual-pathway approach to identification and prosecution.

By conducting simultaneous lines of effort, M2C3 achieved an unprecedented operational tempo. As REMUS conducted wide-area surveys, HMS LEDBURY repositioned to prosecute targets using SEAFOX or Clearance Divers. This method proved particularly valuable in time-sensitive scenarios, such as providing rapid assurance of Critical National Infrastructure, where planning, execution, and accuracy were paramount.

Overcoming challenges

While the operation highlighted the potential of autonomous systems, it also underscored challenges, particularly in accommodating additional REMUS teams within the constrained spaces of the ageing Hunt-class vessels. Solutions are within reach, including cross-training Mine Warfare ratings in autonomous systems or augmenting the Ship's Company with trained personnel from other branches. These measures would allow greater flexibility in capability delivery without compromising core competencies.

Additionally, the operation demonstrated that not all survey responsibilities need to rest solely with the MCM community. While final classification and prosecution of underwater threats remain the domain of specialist units, initial detection and data-gathering can feasibly be carried out by any appropriately equipped platform or mission-system team. This paradigm shift allows dedicated MCM assets to focus on priority missions without sacrificing operational coverage or response effectiveness.

Aligning with broader strategy

These advancements align with the Royal Navy's broader commitment to modernising undersea warfare capabilities and supporting NATO's collective MCM strategy. By integrating autonomous systems, the Royal Navy is not replacing traditional MCM methods but enhancing and future-proofing them. This approach ensures that the UK remains at the forefront of countering increasingly complex undersea threats, while also contributing to allied interoperability.

// By embracing innovation while maintaining the core principles of Mine Warfare, the Royal Navy is ensuring it remains ready to meet the demands of an increasingly complex maritime environment. //

The human element

Far from making specialist MCM platforms obsolete, these new capabilities underscore the continued importance of competent crews and resilient platforms. The success of M2C3's operations highlights the critical role of human expertise in managing and integrating advanced technologies. The adaptability and innovation demonstrated by the crew aboard HMS LEDBURY are a testament to the value of skilled personnel in overcoming the limitations of ageing platforms.

Looking ahead

The next stage for M2C3 is to organically operate AUVs by utilising the newly installed NavyPods in HMS LEDBURY. NavyPods are modular mission systems designed to enhance the operational flexibility of MCM platforms, enabling crews to deploy and manage multiple sensors and autonomous systems. This capability will allow M2C3 to take full ownership of their tools, further integrating autonomous systems into traditional Mine Warfare operations.

Conclusion

M2C3's achievements over the past four months represent a significant step forward in the evolution of Mine Warfare. By combining traditional methods with cutting-edge autonomous systems, the Royal Navy is setting a new standard for operational efficiency and effectiveness. However, the success of these advancements depends on continued investment in next-generation platforms and a sustainable support model for existing assets.

As the Royal Navy navigates the challenges of modern undersea warfare, the lessons learned from M2C3's operations aboard HMS LEDBURY will serve as a blueprint for the future. By embracing innovation while maintaining the core principles of Mine Warfare, the Royal Navy is ensuring it remains ready to meet the demands of an increasingly complex maritime environment.

Additional contributors: Lt Cdr Craig Clark RN, Lt Zachary Johnson RAN, Lt Neil Connell RN

CREW 4: LUCK IS FOR THE ILL-PREPARED – A YEAR OF GETTING THE JOB DONE.

By: Lt Cdr James Bradshaw RN

Crew 4 of the 2nd Mine Countermeasures Squadron has embodied its motto – “Luck is for the ill-prepared” – through a year of demanding operations, lengthy maintenance, and rigorous preparation. A busy 12 months, showcasing their contribution to the squadron’s readiness and operational capability. Leadership across all ranks drove their success in a challenging schedule of UK training and operations.

The year began with regenerating HMS LEDBURY after an extended SSP(D). With the SARC process cracked in January ahead of 2 weeks of SATs for basically all major ME and WE equipment, the team passed OTAP at the first attempt and commenced an intense period of Op IRONBIRD Phase 2 and Op PIKE activity, including the first operational use of the Gavia AUV from a Hunt-class vessel. Working with a hybrid DTXG ADU2 and MTXG Z-Squadron, team they operated in tough conditions around Scotland, the Irish Sea, and the South West Approaches. Despite challenging weather, all tasks were completed safely, reflecting the high standards and useful training during OTAP.



Back in Portsmouth Crew 4 hosted the Maritime Combat Power visit for over 300 Advanced Command and Staff Course (ACSC) students and Armed Forces Parliamentary Scheme members. With iced-coffees and canapés to accompany the Seabed-warfare themed discussions, the team were voted the best individual visit across all three services by course members.

After some reactive tasking, crew 4 executed a RiP out of HMS LEDBURY and into oHMS HURWORTH in one week, assuming VHR on the final day of the RiP. After a brief period of SATs, they deployed for UK operations, embarking MTXG Y-Squadron elements.

In April, a significant milestone was achieving a ‘Ready’ assessment during BOST RTA – the first ship in three years to do so. This success stemmed from thorough preparation and the benefit of a significant period of operations and sea-time in LEDB earlier in the year.

In May, a three-week SP originally planned for six weeks, was completed with support from the Forward Support Unit (FSU) and with excellent teamwork between HUNTCOM and the ship’s company. The team removed all three Diesel Generators (DGs) replacing with two new units and conducted other repairs, sailing 48 hours early to relieve HMS LEDBURY on a CTF 320 operation, shadowing the RFN Stoiky in the English Channel. A brief stop in Den Helder allowed a well-earned run ashore and a chance to meet with RNLN MCM colleagues before facing severe weather en route to Scotland for BOST.

After another ‘Ready’ assessment at the BOST MASC, the ship underwent five weeks of training for global operations, achieving a Very Satisfactory Assessment Tool (VSAT) standard at Final Inspection.

Heading south, with 20 members of Crew 2 embarked for training, HURW visited the Isle of Man for Tynwald National Day. This blend of operational duty and cultural engagement strengthened squadron ties with the Island and including hosting HE the Governor onboard and a formal reception at Government House.

The sight of Falmouth in early-July was a welcome one and after a sunrise hands-to-bathe, they arrived for a Docking Support Period in Falmouth, managed by A&P Falmouth. The first-of-class installation of new propellers and underwater repairs were completed three weeks early, ensuring HURWORTH’s long-term readiness. Returning to Portsmouth, the crew took dormant summer leave before handing over to Crew 8 in early September.

Crew 4 deploy to Op KIPION in MIDDLETON in Oct 25.



FROM FLASH TO BANG!

By: Lt Alex Sharp RN Executive Officer Additional Contributor: LT Cdr A. Davey RN

MCM2 Crew 5 (M2C5), since the last writing of our MAD article has changed quite a bit! We've had nearly a 90% turnover, including a new CO (Lt Cdr Andy Davey). C5 have a new look (photo 1) and a new character. Having begun this period on board HMS HURWORTH (HURW), we managed the installation of the new Command System, ORCA during a Capability Insertion Period (CIP) as well as S2193 software upgrades. For a crew that hadn't had an opportunity to be at sea in over a year, it was a relief to get back to sea as part of a FOST supported 'Safety and Readiness Checks (SARC) and Initial Sea Safety Visit (ISSV)'. Here we began our generation, and for many really showing what a HUNT-class was like at sea.

Successfully RIP'ing from HURW to HMS CATTISTOCK (CATT), where you still find us today, C5 has been able to really make CATT their home and ensure the platform sustains over what has been a busy period and an even busier one to come. It was a privilege and a once in a RN career moment for many to be able to take CATT up the River Thames and berth outboard of HMS BELFAST for the London Marathon. An experience many of the Ships Company won't forget. Continuing along the generation timeline, C5 put their skills



Cattistock passes between Tower Bridge

to the test with some MW training in the Scottish Isles ahead of commencing Operational Training and Assurance Period (OTAP). Performing well for a crew with limited experience, the team demonstrated how their hard work and determination to train is worthwhile, proving to FOST we could deal with a multitude of incidents including MOBEXs, fires, floods, security and even a collision. Turning to MW, the crew conducted a series of SEAFox (our on board mine identification vehicle) runs, drill mine lay and clearance diving operations; all whilst the ship remained active 24-hours a day in State 2 and was able to operate closely with sister ship HURW. Culminating in the detonation of a Diver Placed Charge, this busy yet rewarding training period ensured that CATT and C5 returned to front line operations for the first time in over 12 months. Within the margins of training, the importance of improving the 'lived experience' was evidenced by conducting a Hands to Bathe in the balmy 12°C waters of Lamlash Bay and rewarding their efforts with a Port visit to Belfast. With an on board fishing expert (PO(ME) Sell, a competitive RN angler), those personnel that wanted to, were taught how to fish too. With the final count around 50 mackerel (one for each member of the SC!). Now held at readiness CATT and C5 have continued to deliver at sea, supporting MW tasking around UK waters whilst being prepared to support any contingent operations. Engagements with Squadron affiliates and VVIPs have continued, welcoming the Worshipful Company of Merchant Taylors on board in London and being able to take them to sea for the day in the Solent as well as having the privilege of Welcoming the new 1st Sea Lord on board as part of his 100 day in post campaign. This gave the team an ideal opportunity to discuss their role with 1SL whilst allowing him the first hand experience of what life is like on board an MCMV.

Returning to sea, post Summer, CATT proceeded on task and continues to deliver in support of National requirements whilst preparing for her next hurdle of BOST. Workforce availability continue to present challenges however, C5 has the fighting spirit to succeed and has the correct people in the correct posts in order to deliver what is required. Remaining in CATT for the remainder of 25, C5 will be pushed to the limit and despite being the age of 44 years old, there is plenty of life left in the old girl yet!



Hands to Bathe!

// Crew 5 has the fighting spirit
to succeed... //



Affiliates day at sea



HMS Cattistock at sea in the Scottish Isles



HMS Cattistock and Hurworth in company in Ettrick Bay

FROM MANAMA TO MERSEYSIDE, HOW CREW 6 STORMED A CASTLE...

By: Lt Cdr Tom Loxton RN CO MCM2 Crew 6/XO HMS Stirling Castle

The past year has been one of which Crew 6 should be particularly proud, marking the end of one chapter and the start of another. Completing our third and final Op KIPION deployment (K3) in HMS MIDDLETON in March, then taking on the unprecedented task of bringing HMS STIRLING CASTLE into Royal Navy service from the Royal Fleet Auxiliary, we have been fortunate to experience a unique period in mine warfare history.

K3 began in Oct 24 with a familiar set of challenges: a demanding FOST package in marginal sea conditions followed by a rewarding defence engagement visit to Qatar and recovery of a USN UUV. This provided a great opportunity to train with regional partners, practise safety-of-life drills, and underscore the UK's commitment to maritime security in the Gulf.

A morale-packed series of Christmas events were enjoyed in Bahrain before we sailed in company with HMS CHIDDINGFOLD to Dubai for combined training on passage and a very well received New Year's Eve. In January, we undertook a mixture of operations and exercises, of note the US led TF52 validation exercise Ex TINMAN II and International Maritime Exercise (IMX). February brought the highlight of the deployment: representing the UK at the International Defence Exhibition in Abu Dhabi, where the

team hosted official receptions, senior officers and partners from across the region, whilst enjoying the role that the RN plays in supporting the UK defence business sector overseas. It was a fitting way to conclude Crew 6's time in the Gulf before passing MIDDLETON to Crew 8 at the end of our four-month deployment.

Our return to the UK did not reduce the tempo. After only a short period of leave, we were reassigned to what has since become the defining project of our year: the transition of RFA STIRLING CASTLE into HMS STIRLING CASTLE. This would not be a small undertaking. On 21 July 2025, after Royal Assent was granted, RFA STIRLING CASTLE formally became HMS STIRLING CASTLE. A small, yet poignant ceremony marked the moment that Commander Phil Harper RN assumed command from Captain Rich Reville RFA and the RN ship's company took custody to commence the next phase of the project.



On 21 July 2025, after Royal Assent was granted, RFA STIRLING CASTLE formally became HMS STIRLING CASTLE.

Becoming HMS STIRLING CASTLE - 21 July 2025



RFA STIRLING CASTLE alongside in Birkenhead - April 2025



MCM2 Crew 6 embarked in HMS MIDDLETON, alongside Bahrain - January 2025)

With the arrival of Cdr Harper RN as CO, the Wardroom had a slight re-shuffle (and expansion). I became the Executive Officer and Crew 6's Executive Officer became STCL's First Lieutenant. The team were quickly joined by Lt Cdr Daren Godden RN as the Engineer Officer and Lt Tom Brock RN as Logistics Officer - indicative of the extra challenges faced. The project has asked a great deal of the team, notably the Coxswain, WSQ and the ME department, who have all produced a sterling performance during the transition!

The reality of taking on STIRLING CASTLE has meant adapting at speed. Civilian systems, from dynamic positioning to offshore crane required new training and with limited to no pipelines established, courses were often found and booked by the crew themselves. This resourcefulness, coupled with strong support from the RFA, has allowed us to keep progressing at pace. Life ashore on Merseyside has been very different to that in Bahrain, but we have taken advantage of it and settled in while the ship has remained at Cammell Laird. The contrast in living conditions has been equally striking. STIRLING CASTLE offers a level of comfort unfamiliar to most MCMV crews - wide passageways, twin ensuite cabins at the very worst, and even a sauna - a far cry from the forward mess of a Hunt!

Yet beyond the novelty, the significance is clear. STIRLING CASTLE represents the future of the Royal Navy's mine countermeasures capability. As a mothership for autonomous systems, she will allow uncrewed platforms to operate at range, reducing risk to sailors and providing greater flexibility at a time when seabed infrastructure has never been more important to the UK and her interests.

// **STIRLING CASTLE represents the future of the Royal Navy's mine countermeasures capability** //

We take pride in knowing that our work to bring STIRLING CASTLE into service contributes to this broader effort. The sense of achievement within the crew is tangible, though much work lies ahead before the ship reaches her ready for sea date later this year. From MIDDLETON to STIRLING CASTLE, this has been a year defined by transition, teamwork, and adaptability and for Crew 6, it has been a privilege to play our part in the next chapter of mine warfare.

YANTAR BANTER – CO M2C7 REFLECTIONS

By: Lt Cdr Rob Garner RN



“Well done for your efforts during Mine Warfare OTAP. Unfortunately due to the training time lost while rectifying the sonar defect, you have not reached the required standard and you will need to return for more FOST covered training. You are not ready for operations.”

It was a predictable, but still disappointing result. 4 hours later, after fuelling and storing ship in Faslane, CATTISTOCK (CATT) and MCM2 Crew 7 sailed for operations.

Notwithstanding the OTAP result, CATT was now the on-duty MCMV in UK waters and we had tasking. The 42 year old Hunt, which a few weeks earlier had two A1 OPDEFs on her propulsion plant, was now thumping south down the Irish Sea at our max speed over 14kns: a standout engineering achievement which speaks volumes of C7’s ME Department.

Over the previous few days, during OTAP, information had trickled in that a number of Russian Navy ships were approaching the UK Exclusive Economic Zone (EEZ) from various directions and it was becoming increasingly likely CATT would form part of the Royal Navy’s response. As CO, I pondered what CATT could be tasked to do and what we would need to be ready for. Quickly realising more brains would be better than one, I shared what information I had with my XO and he immediately offered wise counsel, spotting things I had not considered. We agreed to bring the rest of the HODS union into the discussion and between us all we brainstormed how we would prepare the Ship and re-set the Crew as soon as OTAP finished. It was a most useful discussion and reminded me of the experience within our Lt and Senior Rating cadres.

At a Clear Lower Deck before sailing from Faslane, I told the Ship’s Company about the tasking, explained we would not return directly to Portsmouth and to prepare for 7-10 days at sea. These things are always best done in person rather than a Main Broadcast pipe. We had been a seagoing crew for barely three weeks and I was still getting to know everyone; there were a few surprised faces but everyone seemed excited at the prospect of doing something real. I told everyone to be ready to go ‘PED Red’ for extended periods, with mobile phones locked away. I also told the Ship’s Company I would deliberately ‘over share’ information with them throughout the period on operations, but I could only do this with their respect and discretion. To everyone’s credit no one got this wrong.

On the transit south we held further Table Top Tactics sessions, discussing what internal posture and routines each department would keep, how we would maintain operational records and what regular reports we would need to send off the Ship. I was grateful for the 2 extra Warfare Officers from Crew 5 who we had embarked in Faslane so they could work towards their Hunt Class Platform Endorsements; extra Bridge watchkeepers were going to be very useful. I ordered

the necessary preparations to be made. As I hoped, this electrified the Ship’s Company and made everyone realise we had shifted gear onto operations. After a Saturday night feast of fillet steak and chips, we prepared to meet our ‘trade’ north of the Ushant TSS. CATT had covered nearly 450nm in less than 36 hours. We were ready for live ops.

“Sir, isn’t this the sort of jobs Type 23s and Type 45s normally do?” asked Navs as we set ourselves on an intercept course towards the two large radar contacts exiting the Ushant TSS, the only 2 vessels in the area not transmitting on AIS (contary to standard maritime behaviour). It was 0100 and we were confident the two ships, moving in a loose line ahead with dim nav lights and no upper deck lighting, were

the Russian formation. For the rest of the night, everything ran according to the Maritime Operations Centre’s (MOC’s) plan. CATT escorted the two Russian warships north east towards the Casquets TSS, by 0500 we ‘swapped trade’ with HMS IRON DUKE coming in the opposite direction, handed over the 2 warships and took over escorting the next Russian vessel, a large research ship called ‘YANTAR’. Just after Call the Hands, as the sun rose the OOW piped that we were in station abaft the abeam of YANTAR and that the Upper Deck was Out of Bounds. I felt extremely proud

of the team for a textbook series of night time intercepts and station keeping. The MEO, coming up to the Bridge for a look at YANTAR, probably noticed my bleary eyes and asked if I had got much sleep overnight. I took his subtle cue and went and got my head down for a few hours.

That Sunday morning was Remembrance Sunday and we had planned for a Church service at sea. I decided we wouldn’t miss this evolution so we put the Sweep Deck in bounds at 1045. It was a memorable and atmospheric scene: a wind-whipped grey sea and ash grey sky with rain squalls in the distance, the ship moving to the swell with YANTAR 1nm to the south on our port beam. The Ship’s Company fell in smartly wearing poppies, the Senior Rates’ choir belted out the Naval Hymn and I Vow To Thee My Country. I read out a report about the previous HMS CATTISTOCK’s wartime service, including naval gunfire support off Dieppe in late 1944, then AB(MW) Berry-Frith and I laid a wreath. I wonder what the Russians watching us made of it.

That evening, not long after sunset, YANTAR stopped well inside the UK's Exclusive Economic Zone. The full details are too sensitive to relate, but the position YANTAR chose to stop was not innocuous. I informed the MOC and was told our reports were being passed to the highest levels. We closed to monitor YANTAR and it became apparent to me that, against this particular Russian ship, CATT was exactly the right Royal Navy unit for the task.

In the early hours YANTAR slowly got underway and started hearing north, towards the Celtic Sea. Up to now all the reporting had been that she was on transit south towards the Strait of Gibraltar yet here she was, on a northbound course that would take her west of the Scillies by Monday afternoon. CATT shadowed her constantly, keeping close overnight before getting closer after sunrise on Monday morning. An RAF P8 Poseidon Maritime Patrol Aircraft (MPA) arrived overhead and we raised it on the Bridge UHF radio. I asked OPS if he was happy to pass the 'MPA Join' tasking message and he looked at me blankly; of course, this was a PWO thing and I was on the only PWO onboard! So I donned the headset and tried to pass a credible message using established procedures, it having been a few years since I had last done one. The Poseidon got the message and thereon, for the next few days, we had continual MPA coverage, friendly eyes in the sky.

At one point on Monday afternoon, YANTAR stopped in the water again. We closed to shadow and record her actions. Confident the Bridge team were all over it, I briefly popped to my cabin to go to the heads. Navs called down, '*Sir we need you on the Bridge*'. I shot up the ladder to hear a Russian-accented voice on VHF saying, "*Royal Navy Warship, this is Russian Ship*". I answered and the Russian voice said "*We have a gift for you, we will send it across by boat*". The hairs on the back of my neck stood on end. Everyone on the Bridge, Navs, Guns, the Crew 5 officers, the QM and BM, looked at me. As I picked up the VHF handset I quickly considered the optics of a Russian seaboard approaching CATT. What if a photo was taken of them handing a package to us? What would the gift be? I remembered Cold War dits of this sort of exchange, but was that really sensible in 2024 with the UK's relationship with Russia and the ongoing context of the war in Ukraine. No, probably not sensible at all. So I responded, "*Thank you but we are not able to receive at this time*". The Russians acknowledged and did not ask again. I breathed a sigh of relief; I was confident we had made the right call.

CATT continued to shadow YANTAR north, well up into the Irish Sea. On Wednesday morning we were within visual range of the Isle of Man. I looked on WECDIS and worked out we were 100nm from my house in the Peak District. And here we were, shadowing a Russian naval ship, with MPA and Merlin helicopters supporting us.

By this stage, CATT was running low on fuel. The HQ had been monitoring our statistics and in the background had worked up a plan to replenish us so we could sustain on task. We were ordered: head north, proceed to the Clyde. Other units would keep watch on YANTAR in our absence. After a welcome night at anchor in Brodick Bay on the Isle of Arran (sleep!) on Thursday CATT proceeded alongside near Largs, just north of the Cumbrae Gap. Our few hours alongside saw CATT receive fuel, fresh food and extra personnel for the next stage of operations. The logistical effort was impressive: everything was waiting for us as we arrived. After a brief conversation with HODs, we decided to let everyone have 2 hours ashore to stretch their legs, do a supermarket run or grab lunch. I went for a run to clear my head. Everyone had their phones returned for the day and I asked the Ship's Company to refrain from talking about the ongoing operation with anyone off ship. The team returned my trust.

That evening, we sailed and started our third Irish Sea transit of the operation. We all quietly hoped we would meet up with YANTAR again, for round 2. The weather had started to deteriorate and the additional personnel we had embarked in Largs, not so familiar with MCMVs, were feeling the sea state. To our satisfaction, the following night we intercepted YANTAR again, by now returned south to the Celtic Sea. There followed another 36 hours in company with the larger Russian ship, monitoring her activity and providing constant reports back to the MOC.

We finally finished the operation on Sunday afternoon, at the southern limit of the UK EEZ 'down the trouser leg' west of Ushant. Being so far offshore in a rising Atlantic swell was uncomfortable and after handing over YANTAR to a French Navy frigate, we turned towards home and rung on 'Pompey Revs'. We arrived in the Solent the next morning, embarked the Squadron Commander and proceeded up harbor and into 2 Basin.

Our time shadowing YANTAR was one of the most exciting and dynamic periods of live operations any of us had experienced. It reminded us what the Royal Navy is all about: being ready for anything at sea and being better than anyone else at maritime operations. Everyone in Crew 7, junior ABs, seasoned Senior Ratings and young Warfare Officers, rose to the challenge and embraced it. The Hunt Class, despite their age, are incredibly capable and versatile warships. In subsequent months details emerged in open source media about the operation. The Defence Secretary stated in the House of Commons that a RN submarine had been involved shadowing YANTAR. I am extremely proud that the unit that shadowed the YANTAR the longest and achieved the most on task was CATTISTOCK, crewed by MCM2 Crew 7.



ATW RED – DISPATCHES FROM KIPION



By: Lt Cdr Kyle O'Regan AFRIN RN, MNI Commanding Officer, MCM2 Crew 8

Crew 8 deployed to the Gulf in Feb 25 for the crews third and final KIPION rotation in a 2 year cycle. This was the Commanding Officer's first rotation and his first time in the Gulf since SFT in HMS DEFENDER in 2014, this led to an interesting mix of fresh eyes and experience.

The crew deployed in an interesting time Geo-Politically, while the crew were enjoying some well earned R&R and regenerating to deploy, the tensions in the region had remained high and arguably had risen even further, especially in Jan 2025.

Learning some lessons from UK persistent ops in Iraq and Afghanistan, pre-deployment planning had identified this third rotation as one where the crew were likely to face the most self imposed risk – the line between complacency and experience would have to be carefully monitored and assumptions checked constantly. The Command team reached into doctrine to help and hard copies of the Managing Fear, Preparations for War and Practical Experience FOTIs were issued to the messes.

The CO held a Clear Lower Deck and brought the crew into his thinking; while there was no intelligence to suggest that anything outside the norm would be experienced, it would be prudent for everyone to be prepared to go to sea, potentially for a long period. The ship's preparations weren't a concern, that was routine business which was well established and supported by the Naval Support Facility and UKMCC HQ, but rather personnel preparations; did people have a store of shower gel, extra tooth paste, nutty and in the case of the CO, an emergency supply of Coke Zero?

The rotation proceeded without much fuss; highlights include exercises with Iraq, Kuwait and the USA, a port visit to Kuwait, Hands to Bath in the Gulf of Oman, the large multi-national exercise Khunjar Haad 30 in Oman with a visit to Muscat on completion and then what used to be known as the standdown in Abu Dhabi. Returning to Bahrain in early June to a SMP and exercise preparation ahead of a US/UK Interop and CLEANEX.



The following is a narrative of the 19 Days in June that followed and starts on 11 June, the scheduled date of sailing with the unusual sight of GLC and SEO hurrying across the gangway just after colours...

11 Jun

MIDD is preparing to sail when UKMCMFOR's GLC and SEO come to the ship, while being circumspect, they tell the CO and HODs that MIDD may need to sustain at sea for slightly longer than planned, and they were there to help get us to sea in the best material state possible. A rapid CPG follows and NSF Stores and other ships alongside are thrown open and extra consumables and redundancy items, DC timber, soft wood wedges and a host of other items come flowing across the gangway. The CO has a hurried face to face on the Jetty with COM and the ship gets underway as planned, preceded by two US MCMVs. Over the course of the day and into the evening MIDD would be joined by the remaining two US MCMVs, 6 US Coast Guard cutters, the brand new LCS USS Canberra who had just arrived in the JOA and HMS LANCASTER. The Ship's Company is briefed, we won't be doing the Interop as planned, we don't know when we will be back alongside, we're at sea to protect ourselves.

Like so many operations, the first 24–36 hours are almost a let-down. Nothing of significance happens, the ship remains in State 3, there is no significant intelligence or kinetic event. We focus on understanding our operating area, working out communication lines and internal preparations.

13 Jun

Overnight the first strikes of the Twelve Day War were carried out by the IDF. The CO is called at 0630 to be told of credible intelligence of potential missile and drone threats to UK and US forces in the region. The Ship's Company are woken up to Action Stations with the Air Threat Warning (ATW) rising to Yellow. By early forenoon the situation de-escalates somewhat and the Crew fell into State 2 and ATW White.

15 Jun

2115: missiles were reported being launched from Iran towards Israel. Approximately 1 hour later, missiles were sighted in the sky heading towards the NW, they appeared to be heading directly towards MIDDLETON and the Bridge take the ship to ATW Red, further investigation reveals the missiles are far further away than they looked and there was no direct threat. Anti-Air drills onboard and with supporting units intensify.

16 Jun

0400: LANCASTER reports missile launches and increases the ATW to Yellow, three missiles pass overhead through none present a threat to the group. Later in the day the first experiences of GPS denial is noticed. MIDD is ordered to move to Fleet Rations.

17 Jun

LANCASTER came onboard by BTX for a hearts and minds visit and brings a member of his intelligence team in addition to engineers of all flavours to help fix some key systems. Key players get an up-to-date and in-depth intelligence brief which is rapidly disseminated by HODs, LHOMs and key people in the crew. The MEO takes on the role of chief internal briefer, there is a noticeable uptick in morale onboard. Missile activity continues in the wider region but all threats remain outside the immediate op area. All threat warnings remain white.

18 Jun

AM: Drones observed in formation over ships in company (but not MIDD).

PM: Further GPS denial experienced, this time focussing on GPS. In the Dogs, missiles again visually sighted from the bridge prompting a return to ATW Yellow where we remained overnight.

20 Jun

With a slight calming of tensions, MCC have arranged for a rapid logs stop in concert with the USN, although not at the main Bahrain naval bases. GLC reaches hero status to the crew by bringing everything from razors to shower gel to washing powder. The port's Duty Free makes one of the best business decisions ever by opening for the day; everyone picks their poison, with heroic amounts of Zyn being bought by the US units and the Brits preferring cigarettes. The younger generations of both nations clear the shelves of Monster. FSU embark and clear an incredible amount of maintenance which prolongs MIDD's ability to sustain at sea.



22 Jun

MIDD and LANC shift operating locations. The group experiences a complete loss of GPS, for the next 36 hours MIDD will navigate without satellites – much to the joy of the resident Specialist Navigator (SpecN, the CO) and the anguish of the other Warfare Officers.

Iran threatens to close the Strait of Hormuz by mining them. Crew 8 commence planning for a potential mission to re-open them.

PM: the hardest update the CO has had to give so far; Crew 8 will not be going home in 6 days as planned, they are extended indefinitely in theatre. While in general people understand; its not safe to conduct the handover, this does little to soften the blow, the silence after the pipe is total, morale slumps.

23 Jun

Open Source reporting suggests that Iran are planning a missile strike on US installations in Qatar. At 1900 the ship came to ATW Yellow in anticipation of the launch and at 1930 launches were detected with a predicted path close to the group. MIDD comes to ATW Red for what was the final time although that wasn't known at the time. Thirteen missiles were tracked heading towards the area with a closest point of approach of less than 40 miles. All missiles were eventually intercepted. The ship remained at heightened readiness overnight.

24 Jun

After a conditions checks in the forenoon, and having waited for wind to abate, MIDD proceeded alongside in Qatar in State 2 to demonstrate resolve to a regional ally and conduct further sustainment activity. The ship fell out of sea watches and nearly everyone enjoyed a slightly better nights sleep.

25 Jun

A reciprocal ships tour took place with the Qatari Navy with MIDD's Young Officers discovering oppos from BRNC were in the same naval base. MIDD sailed in the evening and LANC and MIDD proceeded back to the original op box. A ceasefire was announced.

26 Jun

MIDD resumed patrols with US units. Over the next 48 hours regional tensions continued to reduce. MIDD conducted some seaboard operations to deliver farewell notes to US MCMVs USS GLADIATOR and DEXTEROUS (firm friends from before Oman!) and started thinking about something approaching normality.



28 Jun

The US Navy give a stunning demonstration of Sea Power; when trying to wrestle with the problems of file transfer between classified systems they decide to forgo the offer of a boat transfer and instead celebrate 'National Logistics Day' by sending a Seahawk. The first VERTREP in a very long time for the Crew (and probably for any Hunt class?).

PM: the ship comes to action to fall back to State 3. Crew 8's relief crew is told to deploy to the JOA and Crew 8 are given a return date, although the CO preaches moderation and tries to prevent hopes getting too high.

29 Jun

Did it even happen if there isn't a photo? The US/UK Surface Action Group comes together for a photex in a powerful demonstration of comradeship and capability.

30 Jun

HMS MIDDLETON returned alongside. Preparations for RIP commence and marks the final stage of an eventful final rotation in the KIPION JOA. COM UKMCC embarks to speak to the sailors and present the Sailor of the Deployment. Serendipity; JOA alcohol restrictions are lifted.

Rounds complete

HMS MIDDLETON and Crew 8 surged to sea for 3 times as long as they were originally intended to be out for. They faced a persistent and very real threat and saw with their own eyes missiles in flight and overhead. They endured periods of reduced rations, poor sleep and alternating periods of monotony and stress as they reacted to the conflict around them. They kept their morale high and a 40 year old ship (not designed for the Arabian Gulf in Summer), at sea, in fighting condition and at immediate notice to find and defeat enemy mines. They demonstrated the best of the Royal Navy and Mine Warfare Community.

SUCCESSFULLY RECOVERING MINEHUNTERS

Despite tumultuous programmes over the last year both MCM2 Crews 9 and 10, borne in HMS BANGOR, have risen to achieve across a broad array of challenges. The Sandown-class MCMV is deployed in the Arabian Gulf and based in Bahrain as part of continuing Royal Navy contribution to Operation KIPION in the region and her Crews rotate on a 4-monthly basis.

In August 2024, MCM2 Crew 9 undertook the task of delivering HMS BANGOR into dry dock. Despite presenting as a technically straightforward move, there were complications facing the crew. BANGOR was in a jeopardised material state and the move was to take place during the hottest time of year in the Gulf. These issues were diligently managed by the MEO and seamanship team. After Crew 9 successfully docked down, the focus quickly shifted to repair plans, maintaining crew currency and planning to regain the material state of BANGOR. The flexibility of the crew was commendable – quickly adapting to new routines in a constantly challenging theatre.

Following the handover from Crew 9 (Oct 2024), MCM2 Crew 10's rotation presented its own challenges and rewards. For a start, the Crew worked extremely hard to boost their own morale and comfort, applying for a grant from the Donald Gosling Foundation to kit out the provided recreation space in the Bahrain Ship Repairing and Engineering Company (BASREC) dockyard. This involved painting and redecorating and building IKEA furniture – a great change from grease systems and bilges for the Marine Engineers! Several members of the Crew received promotions and Good Conduct badges during this time, proving that hard work and capability leads to just rewards no matter how a sailor is employed. The Crew was very lucky to welcome Commander UKMCC at the time, Commodore Mark Anderson, to both officially open the new rec space and present these Sailors with their awards. Despite being in dry dock, Ship's Company continued to train and prepare for all scenarios that they may be expected to deal with, and we were able to send many personnel back to the UK to participate in courses to ensure professional ability remained fully intact despite the lack of sea-going platform. All members of Ship's Company, and the Engineers in particular, were involved in the repair process



in dry dock and worked tireless hours to support Babcock. Finally, after a Christmas and New Year's spent in Bahrain, the Crew enjoyed a Burns Supper celebration very generously catered by NAAFI in the UKNSF facility, and then returned home.

MCM2 Crew 9 took over from Crew 10 in Feb 2025. Under a backdrop of rising regional tensions, a unique rotation awaited the crew. Initial efforts were spearheaded by the Marine Engineering department. BANGOR was approaching the end of her repair and maintenance period; the engineering department's efforts ensured the platform was ready to proceed to wet berth in April 2025. Meanwhile training and development of the crew continued. OsOW were loaned from Bahrain to operations in Norway (a major weather shift). The Mine Warfare department utilised opportunities to train with MTXG X-Ray Sqn, using the ROV to conduct hull and VSP surveys.

In April Crew 9 successfully undocked HMS BANGOR, shortly proceeding to wet berth. Unfortunately, sustaining some damage due to a tug incident during the cold move back to UKNSF. This forced a major programme and focus change.

Following a successful Clearance Diving Element 360 Assurance Visit (GLAD), Crew 9's CDE deployed to OMAN to take part in the multinational Exercise, KHUNJAR HADD. It proved a great opportunity for the CDE to teach, refresh and drill their EOD skills with other nations on a joint exercise. Maintaining the CDE team's SQEP in an easily perishable skill.

Towards the end of Crew 9's rotation in June, under increasingly strained regional tensions, remnants of Crew 9 extended in theatre to maintain ownership of BANGOR and prepare for a handover in June. Personnel remained weeks beyond, into their off watch in July. Some joining the PEMBROKE tasking shortly afterwards. The commitment of the personnel that volunteered to remain beyond normal deployment dates was exceptional – a tribute to the flexibility and ethos of Crew 9. Upon completion of this rotation Crew 9's Marine Engineers were awarded the Herbert-Lott award for their exemplary efforts over the repair period.



The next milestone for both Crew 10 and 9, was waiting in Rosyth. The sale of PEMBROKE required a crew to workup to SARC and FOST requirements. This bore the fruit of interoperability between the UK and Romanian Navies and saw the successful sailing of PEMB into the Firth of Forth and the certification of MCM2 Crew 10 as safe to proceed to Sea by FOST. This six-week process saw Crew 10 and a number assisting personnel from Crew 9 deploy to Rosyth and work with the CC to regenerate PEMB, building on the strong foundations established by the CC. Amongst the most notable achievements was a regeneration of the Seamanship Department in just over a week, SATs and above for all serials during the period at Sea on PEMB, and a very fulfilled Crew who were simply pleased to proceed to Sea on a Sandown-class MCMV and train for what they want to do. This period also once again demonstrated the interoperability between Crews 9 and 10, as members of Crew 9 – including the Commanding Officer who assumed command of both crews! – joined the Crew to shore up gaps in our capability with slick professionalism and easy enthusiasm. We relished the chance to train and advise our Romanian counterparts as much as we could, but above everything we enjoyed the opportunity to go back to Sea after so long alongside. We look forward to being able to do this with BNGR as well in the New Year, and until then we appreciate all the support and are continuing to train hard so that one day we may fight easy.

It must be noted, amidst a busy period with Crew 9, Lt Cdr Will Durbin RN assumed command of both Crew 9 and Crew 10. An extremely rare occurrence, however it offered continuity and oversight across both crews and the regeneration of HMS BANGOR, and the sale of PEMBROKE to the ROU.

HMS BANGOR's two Crews have proven their ability to work effectively, displaying a propensity for quiet and fastidious work, no matter the location or environment. Crews 9 and 10 will continue to provide key outputs in achieving the Royal Navy's long-term commitments to maritime security, wherever that may take them.



365 DAYS OF DELIVERY, TRANSFORMATION AND MORE...

In 2025, the Royal Navy's Mine & Threat Exploitation Group (MTXG) has delivered a landmark year of operational achievement, technological advancement, and public engagement. Comprising WHISKEY, XRAY, YANKEE, and ZULU Squadrons, MTXG has demonstrated its ability to adapt, innovate, and lead in the evolving domain of Mine Countermeasures (MCM) and Seabed Warfare.

For MTXG Headquarters based in HMNB Clyde it has been another exceptionally busy and transformative year. The tempo has remained high to service the ever-growing demand on our highly skilled Force Elements to deliver on the frontline, whilst also working closely with Navy Acquisition and DE&S to enable the Mine Hunting Capability (MHC) Programme's 'year of delivery' seeing the mainstay of MHC Block 1 equipment Transition into Service (TiS).

The Group structure has continued to adapt to meet the demands of the future force, this includes the HQ itself, which now better aligns with the growing scope of MTXG's mission. These changes ensure an agile and responsive HQ that directly supports Squadrons on the frontline. This is crucial given the exponential increase in activity since the Group formed.

Looking ahead into late 2025 and into 2026, the transformation journey is far from over. With the delivery of new equipment and the further growth of the Group, the HQ will need to respond as we progress on our path to fully operationalise these cutting-edge systems, and harness the frontline advantage they offer, whilst integrating the HMS STIRLING CASTLE.

Whiskey Squadron. (Support to Navy Special Operations)

Part of the Group's effort to continually adapt to the operational demand was to subtly restructure, and create a team invested in to support Navy Special Operations. Whiskey Sqn is already utilising novel methods to deliver capability to the frontline. Following a non-standard Force Generation path has presented challenges but underpinned by safe processes and policy has enabled accelerated delivery of technology. From contract to Safe to Operate status, all safety and assurance processes were completed within 100 days seeing the Sqn complete operational tasking in under 6 months. This sees Whiskey act as a 'sandbox' to rapidly deliver novel capabilities to the frontline, supported by a non-conventional FGen approach. This is in line with SDR direction.

X-Ray Sqn. (Expeditionary MCM).

XRAY Squadron has been at the forefront of the Royal Navy's transition to autonomous MCM capability. With three globally deployable units—XU1, XU2, and XU3—the Squadron has operated across the Arctic, Mediterranean, and Middle East, maintaining high-readiness capability and delivering scalable effects at short notice. Their participation in International Maritime Exercise (IMX) 25 marked a milestone in multinational interoperability, deploying from the Japanese Ship BUNGO to conduct sustained UK autonomous MCM operations from a foreign warship. Concurrently, another force element supported Joint Viking 25 in the Arctic Circle, showcasing XRAY's ability to operate across multiple theatres simultaneously.



Over the past year, XRAY has increased its use of Uncrewed Underwater Vehicles (UUVs) by over 200%, refining tactical employment and platform adaptability. Deployments from a variety of platforms—from patrol vessels to frigates—have expanded operational envelopes and reduced reliance on conventional MCM vessels. XRAY's work has driven doctrinal evolution, informed future Mine Hunting Capability (MHC) blocks, and enhanced interoperability with allied forces. Their efforts have also significantly reduced risk to life, transitioning from 40-person crews to small, agile teams and fully uncrewed systems.



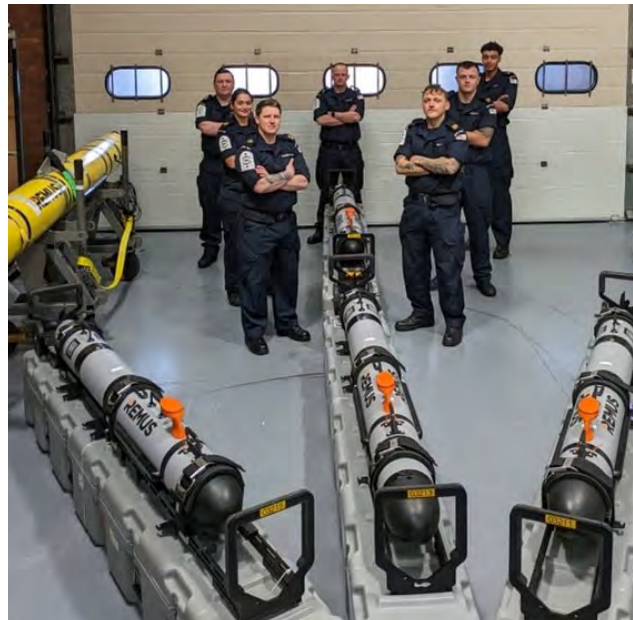
XRAY Squadron successfully led a pioneering multi-unit SBAT force generation aboard RFA Proteus leading the way in generating of the UK's critical underwater infrastructure future protection capability. This marks the first time multiple DTXG and MTXG units have embarked together on a novel platform to operate MUS, setting a new standard in maritime threat exploitation and underwater operations.



RFA Proteus, formerly the Norwegian offshore support vessel Topaz Tangaroa, was acquired by the Ministry of Defence in line with the 2021 Integrated Review's commitment to safeguard national subsea assets. Modified and commissioned in October 2023, RFA Proteus is operated by a permanent Royal Fleet Auxiliary crew and specialist naval teams and is expected to remain at sea for up to 330 days annually. XRAY Squadron's deployment aboard RFA Proteus marked the first operational embedding of mine-hunting and threat-exploitation teams, utilising cutting-edge UUVs including the SeaCat, Gavia, and Defender, and supported by operators from DTXG. These systems offer advanced capabilities such as high-resolution sonar, deep-water endurance, and precision explosive handling.

This historic deployment aboard RFA Proteus marks a significant leap forward in the Royal Navy's ability to protect critical underwater infrastructure. Led by XRAY Squadron, the successful integration of multiple units and advanced autonomous systems demonstrates the UK's growing capability in seabed warfare and sets the foundation for future operations in this increasingly vital domain.

// Looking ahead into late 2025
and into 2026, the transformation
journey is far from over. //



Yankee Squadron

Yankee Unit One (YU1), although yet to formally generate or undertake BOST, has had a remarkably busy year. In November 2024, YU1 participated in Exercise Rogue Spike, gaining insight into force protection tactics. Despite having to withdraw from Exercise Seabreeze in 2024, YU1 successfully attended in 2025, working closely with allies and refining tactics under the NATO flag.

A short-notice activation in Northern Scotland coincided with the completion of OEM training for the Maritime Mine Countermeasures System. Despite this the team mobilised the SeaCat MUUV equipment inside the demanded readiness profile and responded. As the year closes, YU1 is preparing for the final MMCM ROV trials prior to the TiS of the first Thales MMCM system in Oct.

YANKEE Squadron Unit Two (YU2), formed in early 2025, quickly established itself as a dynamic force. Formed with a number of former MASTT personnel, YU2 conducted OEM training on the TKMS ARCIMS systems, culminating in Level 3 autonomy trials. These trials provided excellent lessons leading to modifications.

YU2 demonstrated its versatility by conducting multiple lines of tasking, including ARCIMS trials in Scotland, and Gavia OEM training in Iceland. During Exercise TALISMAN SABRE 25, YU2 deployed to Australia, operating sustainably from a foreign ship and integrating within the AUKUS construct. Their participation in the Royal Yacht Squadron's Reception Capability Demonstration in Cowes and the DSEI Expo further showcased their commitment to innovation and public engagement.



Zulu Squadron

Zulu Squadron has also made significant strides whilst maintaining enduring readiness in support of DT1, operating beyond Clyde and engaging with communities across Scotland. A short-notice activation in January saw the Squadron deploy to the Isle of Skye within 36 hours, operating in sub-zero temperatures and sustaining operations for five weeks. Their fleet of IVER 3 and 4 UUVs was joined by YU1's SeaCat MUUV, demonstrating MTXG's ability to adapt and integrate rapidly.

Following their return to Clyde, Zulu Squadron undertook its first planned out-of-area deployment during Exercise TRIBAL REACH. RNMB HEBE completed the first canal transit of a VAHANA-class vessel through the Crinan Canal, arriving in Oban for a public engagement event that drew over 1,000 visitors. The event featured a capability demonstration and concluded with a parade supported by Lomond School and the Oban Sea Cadets.

"Public engagement and demonstration of our capabilities are an essential way to enable understanding of the activity we undertake on behalf of the nation," said Lt Cdr Coleman RN. "Forming a Bond of Friendship with the town of Oban ensures strong links between the Royal Navy and our local communities."



For many sailors, the deployment was a formative experience. *"The chance to do something different, challenging and fun—being able to deploy in such a small unit to a place like Oban, especially having journeyed through the canal—is the type of memory that will last a lifetime,"* said AB Caitlyn Nicholas of Zulu Squadron.

Plans are already underway for Exercise TRIBAL REACH 26, which aims to become an annual training and public outreach initiative.

The near future will see Zulu Squadron trained and take ownership of the MMCM system, as well as the Seacat MUUV system. This is crucial to thicken the Royal Navy's capability to support CASD on the Clyde.



OPERATIONAL CONVERSION UNIT (OCU)

The Portsmouth-based Mine & Threat Exploitation Group (MTXG) Operational Conversion Unit has commenced delivery of specialist training on cutting-edge Autonomous Mine Hunting Systems procured under the Mine Hunting Capability (MHC) programme, alongside other in-service systems currently employed by the Royal Navy.

To date, the OCU has already generated savings for the Royal Navy in the region of £280,000, a figure expected to grow significantly with each successive course delivered. These savings reflect the cost-effective nature of the OCU's internal training model, which reduces reliance on external contractors and commercial training providers.

From 2028, career training for the Mine Warfare Cadre will undergo a major transformation when the enduring training solution is formally established by the MHC programme. However, the rapid pace of system procurement has necessitated the creation of an interim training solution, developed and implemented swiftly to meet operational demands.

The MTXG OCU was formally stood up in November 2024, operating with a lean liability of just seven personnel. The unit is based in the Sail Loft at HMNB Portsmouth, a location previously occupied by the Maritime Autonomous Systems Trials Team (MASTT). Despite its modest size, the OCU has quickly become a vital component in the Navy's transition to autonomous mine warfare.

The team offers a broadly cost-neutral solution to deliver organic, in-house training to the Mine Warfare Cadre on the autonomous systems acquired through the MHC programme, a multi-billion-pound initiative ranked among the top five priorities by the 1st Sea Lord. This underscores the strategic importance of the OCU's mission and its alignment with the Royal Navy's future vision.

Officer in Charge (OIC) of the OCU, Lt Cdr Dan Chandos-Hall RN, commented:

"We are a small team with a big task our people have worked incredibly hard to bring a training solution to fruition without reliance on contractor support in a really short space of time."

The OCU has been tasked with delivering training across nine autonomous systems, as MTXG transitions away from traditional mine hunting methods and embraces autonomy as the future of mine warfare. This shift represents a significant evolution in capability and doctrine.

Lt Cdr Chandos Hall further added:

"There are only seven of us to design and deliver upwards of nine courses as quickly as possible, so we've had to identify agile ways of bringing compliant training to life. It's a testament to the experience and relentless work ethic of the team that we've made the progress we have, especially when they're still being trained in the systems themselves; we should be delivering training in five of those systems by the end of next year."

Historically, MTXG has relied on training provided by equipment manufacturers due to the absence of Royal Navy delivered instruction. Since November 2024, however, the OCU has successfully delivered 12 iterations of training, covering the Remotely Operated Vehicle (ROV) "Video Ray Defender" and the command system software "Seetrack."

Looking ahead, the team will receive training on the Seacat Medium Unmanned Underwater Vehicle (MUUV) in October 2025, followed by the ARCIMS Unmanned Surface Vessel (USV) in February 2026, with internal delivery of these systems scheduled to begin next year.

The MTXG OCU's work not only supports the immediate operational needs of the Royal Navy but also lays the groundwork for a sustainable, scalable training model that will underpin the future of autonomous mine warfare. Their efforts exemplify innovation, agility, and dedication in the face of evolving maritime threats.

// To date, the OCU has already generated savings for the Royal Navy in the region of £280,000 //

MTXG LOGS DEPARTMENT: A YEAR OF ACHIEVEMENTS

The past year has been a resounding success for the MTXG Logistics Department, marked by significant accomplishments that have strengthened operational capability and enhanced the organisation's efficiency. Through innovation, collaboration, and dedication, the MTXG Movers have delivered exceptional results across multiple areas.

One of the department's standout achievements was securing a Full Assurance FLI across all three squadrons—X-Ray, Yankee, and Zulu. This milestone reflects the department's swift pivot to delivering Logistics and Support in our new Scheme Of Manoeuvre and operating profile.

In addition to this, the team played a pivotal role in the sale and regeneration of HMS Pembroke to Romania. This complex task involved clearing legacy equipment accumulated over many years and reintegrating it into the reverse supply chain. The effort extended to other vessels, including HMS Ramsey, Bangor, Penzance, Shoreham, and Grimsby, showcasing the department's ability to manage large-scale logistical challenges effectively.

The MTXG Logs Department also provided critical support to FOST during X-Ray Squadron's BOST package. This included the initial creation of a newly developed FOST DART, which is set to become a key mechanism for

assuring the supply chain of deployed squadrons in the future. This period was all the more impressive given the reaction to contingent operations, seeing our movers move equipment from one end of the country to the other with impressive timelines, ensuring capability was available to the Commander.

Another forward-looking initiative was the commencement of the Deployed Spares Package (DSP) concept within MTXG. A concept shamelessly stolen from the WAFUs. This project aims to enhance operational sustainability by ensuring that essential spares are readily available during deployments, a move that will significantly improve mission readiness.

The department also stood up a dedicated Movements Cell, which has already coordinated several international equipment moves at short notice. Despite learning on the job, the team has demonstrated exceptional adaptability and professionalism, ensuring the successful delivery of critical assets to support operations abroad.

The integration of supply chain personnel into live tasking and exercises with the squadrons has also been a game-changer. This initiative has vastly improved on-the-ground operational capability (OC) while fostering closer collaboration between logistics teams and operational units.

To further enhance the department's effectiveness, new competencies were introduced for MTXG Logistics personnel. Several team members have completed B3 forklift training, enabling them to manage the units growing stock of containerised equipment. Additionally, qualifications in HGV and crane operations have been introduced, which will enable the department to operate more organically and independently in the future. This focus on enhancing the Suitably Qualified and Experienced Personnel within the team underscores a commitment to long-term capability development.

The MTXG Logs Department's achievements over the past year are a testament to its dedication, innovation, and professionalism. By addressing both immediate operational needs and future challenges, the department has positioned itself as a cornerstone of MTXG's success, ensuring it remains ready to meet the demands of an ever-evolving operational environment.



AUTONOMOUS MINESWEEPING – INTRODUCING AN ESSENTIAL PART OF THE MCM TOOLBOX

This summer saw the delivery of three autonomous minesweeping payloads from TKMS ATLAS UK (formerly ATLAS ELEKTRONIK UK) to the RN's MTXG via the MHC project. Providing an essential part of the MCM toolbox, how will the autonomous sweep system complement the other elements in the fight against mine threats?

Why do we need minesweeping anyway?

Every MCM technique employed at sea has its strengths and weaknesses, depending on the exact nature of the threat and the environmental conditions being encountered. Mine hunting (MH) has, in recent years, been the preferred means of reducing risk as, in theory, it provides the operator with the confidence (often false) that an area has been searched, and threats neutralised. In practice, this confidence may well be misplaced – no sensor system can achieve perfect detections, and many factors can hamper the success of MH operations.

Without an alternative, only repeated multi-directional coverage of the same area can be employed by an MCM Commander in an attempt to reduce the risk further/ to an acceptable level. However, some combinations of the environment and/or threat will conspire to reduce the effectiveness of MH techniques, to a point where the required risk reduction simply cannot be achieved.

It is in these areas where mine sweeping (MS) systems can play a particularly important role.

When does mine hunting not work (as well as you might expect)?

When you are constrained by the environment:

- Challenging topography
- Clutter
- Sound velocity profiles
- Visibility
- Burial
- Scour
- Bedforms
- Liquefaction
- Sediment Outflow

In the presence of threat counter countermeasures:

- Low Target Echo Strength (TES)
- Concealment
- Camouflage
- Decoys



What can minesweeping do?

Influence minesweeping attacks a mine's logic through its own sensors to cause it to (incorrectly!) actuate. This is achieved in one of two ways:

Mine Setting Mode (MSM) – used when you know how the mine logic works; the user can set up the sweep to cause actuation. This can give a large swept path with an associated high coverage rate. For many mines, multiple valid inputs can be given during each pass.

Target Simulation Mode (TSM) – if you don't know the mine threat, but you do know your own platform signatures, then the sweep can be set to emulate the platform you are trying to protect, again causing mine actuation. This can be a final check before the transit of your target platform.

With both of these methods of minesweeping, you have the advantage over mine hunting techniques in that you are combining the search and neutralisation phase into a single activity, thus providing a heightened tempo of operations and speed of advance.

A third technique that is possible with MS equipment is **Mine Jamming**. This exploits a weakness in MS (that mines may be sophisticated enough to reject the artificial signatures that MS outputs) by outputting an unrealistic signature alongside the transiting vessel, making the logic of the mine conclude it is being swept and rejecting the stimuli.

So why aren't we all just minesweeping all the time?

In the past, the chief concern with influence MS, was the requirement to use crewed platforms placing both the vessel and personnel at higher risk. The development of off board, remotely operated, autonomous systems can, to a large degree, address this issue.

Just as low target strength mines reduce the probability of the sonar detecting a mine, sweep rejection logic reduces the probability of the sweep actuating the mine. While MH can be significantly slowed when faced with poor conditions (e.g. burial, clutter, or hard to detect mines), MS operations can be slowed by ship counters and arming delays.

The answer? An MCM Toolbox!

History of the project

During the Gulf Conflict in 2003 ATLAS UK were approached by the MOD to develop a new MCM capability, part of an Urgent Operational Requirement (UOR) to provide a Shallow Water Influence Minesweeping capability (SWIMS) to ensure safe passage into Umm Qasr. As a result of this, a remote minesweeping capability was integrated onto 12 Combat Support Boats and four MCMVs. Subsequently, after the Gulf War SWIMS was removed from service.

In 2006, MOD Succession Planning for Combined Influence Sweep (CIS) led to the Flexible Agile Sweeping Technology (FAST) Technology Demonstrator Programme (TDP) from 2007 – 2011. FAST was USV based, with a remote and autonomous acoustic and magnetic influence mine sweeping solution as part of the RN MCM Toolbox capability. The programme de-risked replacing the out of service CIS on the Hunt-class MCMVs. Subsequently, ATLAS UK developed the demonstrator into a production variant which resulted in export sales. Then came the MHC programme, which competed a sweeping requirement in 2015 to provide a demonstrator system, which ATLAS UK delivered in 2018.

This demonstrator system was then taken by MASTT for a thorough period of evaluation, including cold weather (Halifax) and hot weather trials (Bahrain). These trials resulted in a number of recommendations for improvements based on usability and robustness of the system. ATLAS UK were then contracted to deliver three production standard Sweep Payloads to the RN, to operate from the ARCIMS USVs that had been procured under the original contract and which were being used for a number of roles by the RN. These Sweep systems were handed over in summer 2025.





UK Sweep VIP Handover Say June 2025



Uncrewed Surface Vessel (USV)



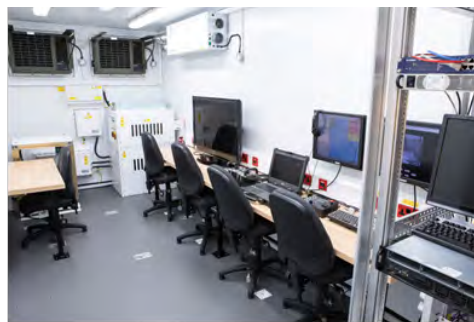
Power Generation Module (PGM)

Sense & Avoid
SensorCoil Auxiliary Boats
(CABs)

Acoustic Toolbox



Portable System



Command Centre



Sweep Monitoring System (SMS)



Portable System



RNMB HALCYON fitted with the sweep system PGM and the removable 'T bar' containing sweep connections and cabling

What is in the sweep capability?

The UK sweep capability system consists of a USV capable of towing a toolbox of interchangeable influence generation equipment consisting of magnetic, electric and acoustic components, to maximise the effectiveness against current and emerging mine threats. It has been designed to operate from a well-found port, a mothership (e.g. HMS STIRLING CASTLE) or an MCMV.

Centred around the ARCIMS USV, the sweep comprises a suite of magnetic, electric and acoustic components that combine to deliver MSM and TSM mine sweeping. The USV is a road-, sea- and air-transportable platform, which the RN have been using since 2014 in various MCM roles (RNMBs HAZARD, HUSSAR, HARRIER, HALCYON and HYDRA). The USV also carries the sweep Power Generation Module (PGM), which provides the programmable outputs/waveforms for the electro-magnetic and acoustic sources, and the 'T bar' sweep cabling and connection unit, which allows the system to be rapidly re-rolled.

The Electro-magnetic sweep sources come in two forms – the Magnetic Electrode Sweep (MES) and the Towed Coil Sweep (TCS).

- MES is a simple, yet effective clip-on electro-magnetic sweep arrangement comprising two buoyant towed electrode sweep cables. This sweep is easy to deploy and tow and generates large electric and magnetic fields for fast and effective minesweeping.
- TCS is a high fidelity/reconfigurable towed magnetic and electric sweep, capable of TSM minesweeping and the replication of ship signatures. The coils are fitted to three inflatable coil auxiliary boats (CABs) which can be deployed singly or all together to create the breadth and complexity of a platform's signature. These are towed behind the USV at varying spacings to better emulate the target platform.

- The acoustic toolbox has several components including the Hydro Powered Acoustic Source (HPAS) and Electronically Programmable Acoustic Source (EPAS).
- HPAS is a simple hydro-dynamically powered clip-on source with no power cables needed, providing a broadband, ship like acoustic signal.
- EPAS is a wideband fully programmable acoustic source capable of creating broadband ship like signatures and narrowband tonals.

The sweep is designed for transportation in three 20' ISO containers, with the Portable Command Centre (PCC) occupying a fourth container. The PCC hosts all the C3 and autonomy software for control of the system, as well as the Sweep Tactical Decision Aid (TDA) which enables the user to correctly configure the sweep equipment to deliver the desired outputs and effects.

What's next? Sweeping statements...

The next stage is to complete training for MTXG personnel so that the transition into operational service can commence. The hard work then begins of reinstating a sweep capability into the RN; relearning the skills and techniques that enable this equipment to be employed to its full advantage. MS is part of the holistic MCM solution, increasing the Pwin of the mission, and the confidence of those vessels following the MTXG teams. Understanding the complementary elements of the MCM toolbox, and the benefits of employing the best technique for the threat and environment on the day will always be a challenge, but the rewards, in terms of reducing the risk to operations and personnel, are there to be taken.

5 BELLS; THE END FOR RN CLEARANCE DIVING?...

Much of this magazine hints at transition to a navy with maritime autonomous systems (MAS) at its core, underpinned by strides in AI which shorten decision loops and minimise human error. So surely it's logical to assume a certain inevitability about the ultimate demise of the clearance diver as a mainstay of our fighting force? Well, before we decide quite yet to turn Horsea Lake over entirely to the Autumn Watch team for the study of toxic landfill runoff jellyfish let's examine what's anticipated to be required of the RN diver between now and 2040.

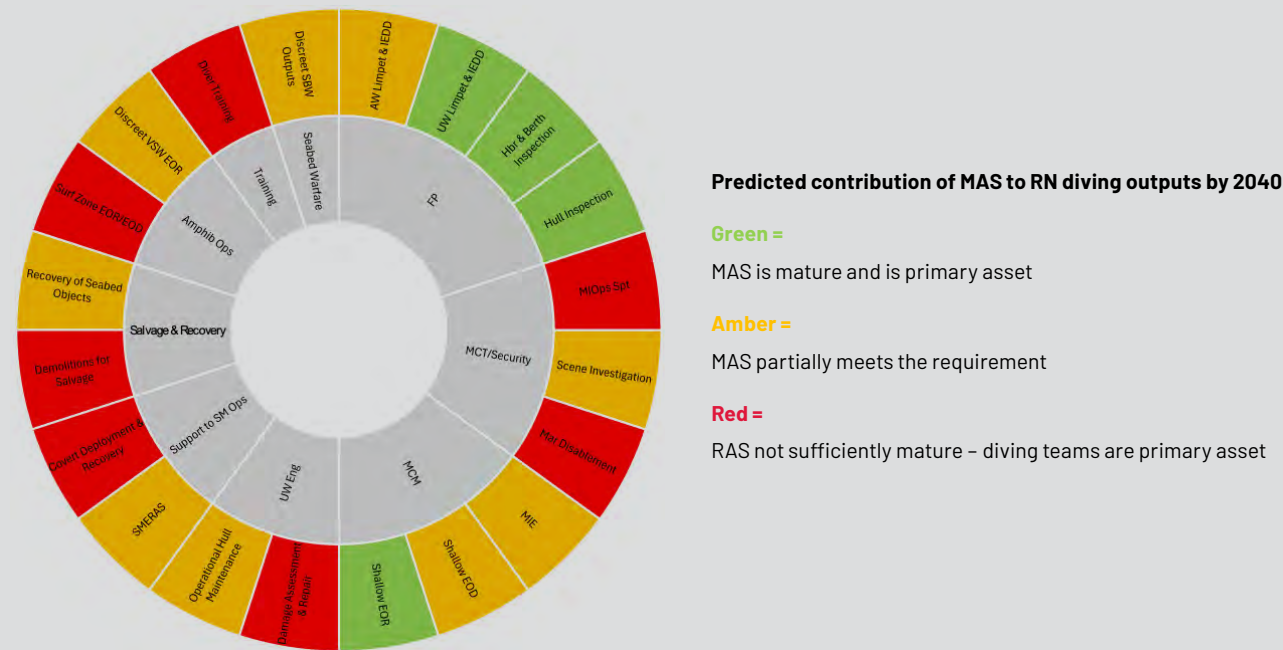


Figure 1: RN Diving outputs with forecast MAS maturity by 2040.

Just what do divers do?

Aside from the obvious gags about cluttering up the gym and subsidising Dubai's nighttime economy a Dstl study concludes RN divers contribute to the nine Tier 1 capability outputs at **Fig 1** which together comprise 20 sub-tasks. The colour-coding illustrates that, while greatly contributing to underwater exploitation in the round, MAS will continue to have severe limitations for many of the principal outputs of the RN diver.

The benefits of divers over MAS are broadly:

- Can adapt to novel scenarios.
- Can interpret, assess and act on changes to the environment in-situ.
- Higher trust to operate in challenging environments.
- Dexterity and adaptability to handle tools.

By considering each of the Tier 1 capability outputs in turn we can form a view of the future requirement for the RN diver to employ the above four key attributes to make a vital contribution.



Figure 3: Pliant Energy Velox bio-mimetic AUV prototype.



Figure 2: Susceptibility of an AUV to nets as a simple countermeasure.

Mine countermeasures

Though capable of an impressive contribution to MCM, AUVs occasionally operate unexpectedly, break down or return with distorted data in high currents. AUVs can also become caught in fishing lines, nets, seaweed and other flotsam in cluttered water spaces. **Fig 2**. Ultimately there is an unfortunate trade-off between using a high enough resolution sonar to detect fine objects that are snagging risks while maintaining a low enough frequency to give sufficient standoff to action a change of course.

With the proliferation of AUVs for MCM it is simply a matter of time before our adversaries begin to deliberately field countermeasures to achieve defeat through entanglement. In the time-honoured spirit of 'combat Darwinism' no doubt counter-countermeasures will then appear but until such time as they are proven, there will remain a requirement for divers to recover AUVs or explosively deny them to the enemy.

While MHC's multi-shot mine neutralisation system (MuMNS) offers promise, a high-density minefield is likely to expose limitations of the system as the onboard disposal charges are used up and requirement re-ammunitioning. Availability of RN divers to augment MAS through use of diver and ROV placed charges can continue to offer the operational commander greater tactical freedoms and allow neutralisation to continue while MHC systems are off-task.

It is also highly likely that divers will continue to be required to play a prominent role in mine investigation and exploitation (MIE) to enable accurate assessment of the threat to inform future countermeasures and neutralisation techniques. Although some work has been done on a MAS-delivered MIE solution conspicuous challenges exist with regard to influence implications for use of ROVs in close proximity to unknown ordnance and the dexterity/heft required for securing of lifting apparatus to the mine.

Support to amphibious operations

Execution of VSW/surf zone reconnaissance and clearance of littoral access points (LAP) represents one of the most challenging and complex environments; it is not an area that the MHC Programme (with its 10m minimum depth requirement) is mandated to deliver against.

Studies to investigate the performance of AUVs in the surf zone have yielded poor results due to instability of the vehicle and the complex topography creating sonar shadow zones. Obstructions and barriers are also particularly simple for an adversary to deploy in this environment. Advances in diver propulsion devices permit discreet insertion of RN divers equipped with high frequency handheld sonar which may have more success than AUV-mounted variants. Although impractical for long-range insertion the use of diver-delivered bottom-crawling or bio-mimetic AUVs (which mimic a swimming action rather than use propellers) could see effective human/machine teaming within this highly turbid environment. **Fig 3**.

With a burgeoning demand for special operations support to an advance force (as evidenced by the SOMTG combat swimming proposition currently being generated) it is likely that special reconnaissance and direct action by RN divers will be increasingly required to facilitate access to LAP by UK Commando Force.

Force Protection (FP)

MAS use in underwater FP is likely to only ever complement rather than replace divers. While the RN will continue to grow its fleet and expertise in ROVs for hull inspection it is unlikely that the efficiency of a diver-conducted 'necklace' search will be matched with regard to speed or effectiveness, noting the tactile skills of the diver in poor visibility. It is likely, therefore, that a blended approach to diver and ROV will be required by underwater FP teams for the foreseeable future.

Limpet mine/IED disposal by MAS is an area of current focus and can be expected to soon bear fruit for the frontline, providing a genuine "remote where possible" capability. Significant 'access' challenges will exist, however, including to devices emplaced above the waterline. While divers can simultaneously effect a render safe procedures on a number of devices in reasonable proximity this is impractical for remote systems, even if more than one ROV is available. The water column also presents unique challenges for the finessing of positive EOD action (such as use of a disruptor) due to difficulties of ROV station-keeping.

Salvage and recovery

The RN has a requirement to conduct seabed recovery operations including for sunken vessels or aircraft. There may be a requirement to cut into the object to assist in the removal of equipment, ordnance or classified material or to enter into sunken aircraft, ships and submarines to effect the same. The Salvage and Marine Operations (SALMO) organisation is a civilian team belonging to DE&S which provides critical support to such subsea maritime operations and is available at very high readiness. SALMO's capacity is in high demand, however, notably with the rapidly evolving landscape of seabed warfare, nor do they possess expertise in EOD. It is reasonable to foresee, therefore, a requirement for RN divers to work in partnership with SALMO to effect salvage and recovery, particularly where ordnance, munitions and explosives are concerned.

It is an acknowledged shortfall that the RN does not possess a saturation diving capability permitting prolonged-duration seabed activity. Early work is in progress to examine feasibility of a return to saturation diving with a core team of qualified personnel undertaking commercially-delivered training and currency activity in order that a capability could be rapidly deployed using specialist contracted shipping. Subject to further detailed work and evaluation of other providers, this could include partnering with DEEP, a commercial enterprise located at the former NDAC site at Chepstow which is also carrying out pioneering work on underwater saturation diving habitats. **Fig 4.**

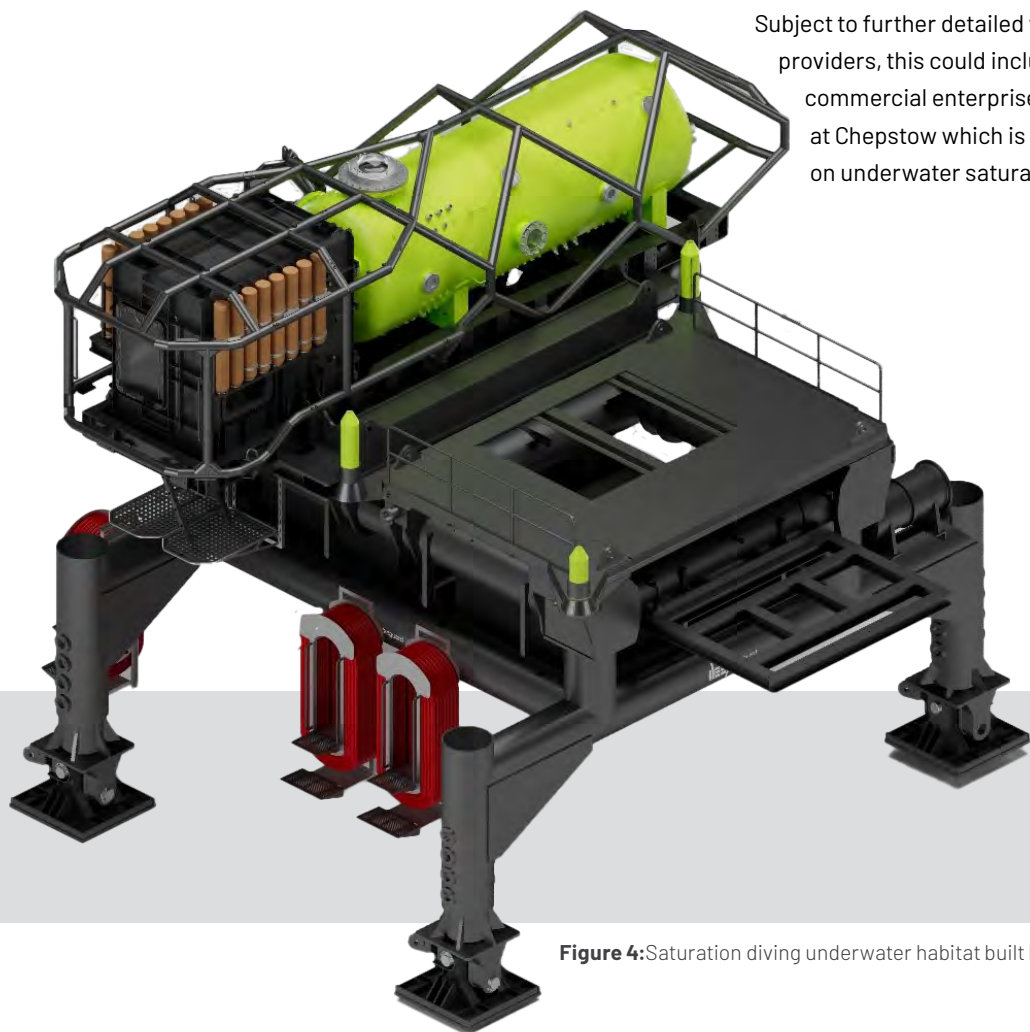


Figure 4: Saturation diving underwater habitat built by DEEP.

Support to submarine operations

Specialist RN divers currently provide a supporting role to UK submarine operations, specifically for deployment and recovery of specialist capabilities. This capability offers genuine strategic choice and can be expected to endure as a capability requirement unable to be replaced by MAS and with RN divers underpinning safe operation of the system.

Such activity may ultimately be broadened to include covert maritime projection using hybrid craft capable of a combination of surfaced transit from range and submerged 'final mile' approach to an objective. Such a system may see RN divers employed as vessel pilots or as part of the payload itself. **Fig 5.**

NATO's Submarine Rescue System (NSRS) will also continue to require high readiness provision of RN divers due to the complexity of the associated recompression chamber network and in crewing of the submarine rescue vessel.

Figure 5: Novel means of diver projection could include hybrid vessels such as Subsea Craft's Victa.

Underwater engineering (UWE)

Given the wide range of subsea inspection, maintenance, damage assessment and repair tasks to which RN divers currently contribute, it is unlikely that bespoke MAS with specialised toolsets will represent a cost-effective replacement in the near to medium term. Submarine UWE tasks that require tactile inspection, including within ballast tanks, will continue to require highly specialist RN diver skills with this requirement forecast to increase for future classes of submarines. Technological enhancements for the diver may include augmented vision displays with detailed UWE task instructions as well as enhanced communication between diver and surface supervisor. **Fig 6.**

It is considered unlikely that RN MAS will be used to conduct UW damage repair by RN engineers or have sufficient sensing capability to conduct detailed structural assessment therefore it is foreseen that the primary asset for battle (and peacetime) damage assessment and repair will be divers.

Maritime CT & security

RN divers are required to provide specialist assault-EOD support in response to terrorism incidents in the maritime domain. Given that these operations are complex, dynamic and focused on the delivery of people into a fighting theatre, the skills of the RN diver will continue to be required.

Wider maritime security roles for RN divers may include contribution to maritime interdiction operations (MIOps) through support to Commando Force boarding operations plus technical exploitation of explosive or novel threats. The demand signal for MIOps activity in home waters is likely to increase as our adversaries encroach UK sensitive waters to conduct sub-threshold activity and for MACA support to law enforcement for counter illicit trafficking. Forensic training of RN divers and their understanding of evidential chains will continue to be important in securing a 'legal finish' to such operations.

NATO's Submarine Rescue System (NSRS) will also continue to require high readiness provision of RN divers...

Seabed warfare

The RN diving contribution to seabed warfare is sensitive and cannot be described here in detail but is certain to endure and will require ongoing close partnership with MAS-enabled entities. Irrespective of the operation taking place within depth limits for RN diving, divers are acknowledged as the technical experts in identifying, manipulating, neutralising and exploiting seabed threats, either explosive or novel in nature. Generation of a limited saturation diving capability as described above would provide further options for achieving effects at depth.

Training

Although MAS and other subsea equipment have potential to enhance diver training by improving supervisor oversight, communication links and diver situational awareness, fundamentally divers will always require to be trained by divers. While the enduring contribution of RN divers to training (either of 'ab initio' personnel or during 'career' courses) is not in doubt, the nature of training is likely to evolve, with a greater focus on role specific training due to the diversity of frontline outputs and the symbiotic relationship with MAS.

Conclusion

With MAS forecast to reach maturity to perform only four of the 20 sub-tasks performed by the RN diver it's therefore certain that a vital contribution to the underwater battlespace will be made by clearance divers out to 2040 and likely well beyond. Opportunity exists to embrace MAS, particularly for roles which are deep, dull and dangerous but autonomy should be viewed as an enabler to diving rather than a threat. With an increasing demand signal for seabed warfare and special operations outputs and compelling arguments to go deeper for longer, the future is bright for RN diving. Those real estate moguls keen to provide luxury lakeside living to toxic jellyfish enthusiasts may just have to look elsewhere for a development opportunity for the time being.



Figure 6: Diver augmented display for enhanced situational awareness.

HRH THE PRINCESS ROYAL VISIT



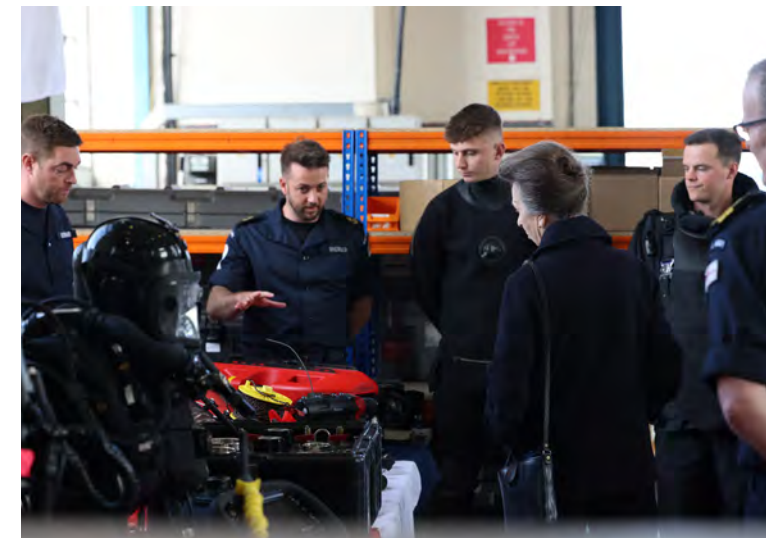
Her Royal Highness The Princess Royal, Commodore-In-Chief of His Majesty's Naval Base Portsmouth, paid a special visit to the Royal Navy's Patrol, Underwater Exploitation and Diving Force Command (PUXD) yesterday.

The visit provided an opportunity for PUXD to demonstrate their cutting-edge capabilities and showcase their global impact as one of the smaller units of the Royal Navy's Surface Flotilla.

Under the leadership of Captain Pressdee, PUXD is a globally dispersed force of approximately 1,750 personnel and at the forefront of delivering autonomous and remote capabilities. The PUXD Force Command is structured into five specialised Groups and Squadrons: Mine Threat Exploitation Group (MTXG), Second Mine Countermeasures Squadron (MCM2), Diving and Threat Exploitation Group (DTXG), Overseas Patrol Squadron and Coastal Forces Squadron (CFS), each contributing to the Royal Navy's operational excellence and innovation.

Captain Pressdee said:

"It was an honour to host Her Royal Highness The Princess Royal and to have the opportunity to showcase the remarkable work that our highly specialised cadres continually deliver across diverse global commitments. The visit also served as an opportunity to demonstrate the novel technologies that we are pioneering, placing us firmly at the vanguard of the future Royal Navy operational capability."



A LETHAL LEGACY – FORCE GENERATION FOR THE BLACK SEA

By: Lt Cdr Kyle De-Banks RN, DTXG Operations Officer

During Op GRANBY as part of the 1991 Gulf War, Royal Navy divers and surface swimmers defeated the Iraqi drifting mine threat by visually locating the mines and then manually neutralising them with explosive charges. This direct, hands-on approach was essential because the mines' unpredictable movement and the murky waters of the Persian Gulf made traditional mine-hunting methods ineffective.

The unseen threat

Fast forward to 2025 and the Black Sea, with the threat of drifting mines remain a present and significant danger to naval forces and shipping. Unlike their moored counterparts which are tethered to the seabed, drifting mines are free-floating, carried by currents, and are extremely difficult to track. This unpredictable nature makes them a constant, unseen threat to vessels transiting the West of the Black Sea and pose a threat to civilians when they wash up on shore. The complex currents, silty waters and low visibility of the Western Black Sea further complicate their detection.

How divers and swimmers neutralise the threat

The task of defeating this threat falls to the MCM forces of Ukraine, Turkiye, Bulgaria & Romania, who have, to date, disposed of over 100 drifting mines since the illegal invasion of Russia into Ukraine. These mines are neutralised through a combination of projectile attack with medium calibre weapons and divers/swimmers armed with explosive charges.

The UK's Diving and Threat Exploitation Group (DTXG), as part of the Coalition of the Willing has been force generating to combat this threat. This process has involved the selection of a bespoke cohort of Clearance Divers and Mine Warfare personnel from the Mine and Threat Exploitation Group (MTXG).



NAS 847 Wildcat identifies a drifting mine and hovers in position

Pouncer operations

Divers from across DTXG have been conducting Pouncer Operations (helicasting) at Horsea Island and the South Coast of the UK; this process involves the use of helicopters to visually locate the mines. Once a mine is located, it is kept under constant observation and the helicopter positions itself in an optimal station. Once a mine is confirmed, the divers onboard enter the water to approach it directly. Carrying only the necessary equipment to counter the mine, they ensure they approach from a safe angle and attach an explosive charge to the mine itself. After the explosive charge is in place, the diver retreats to a safe distance and detonates the charge, destroying the mine.



Multi-national exercise SEABREEZE 2025

Ex SEABREEZE

The Coalition of the Willing, working with Ukrainian and partner nations conducted Ex SEABREEZE at Portland, UK in July 25. This gave the DTXG first hand exposure to the Ukrainian divers and EOD operators combating this threat in the Black Sea and also afforded the opportunity to build relationships and conduct live demolitions alongside our Ukrainian partners.

Mission rehearsal

To ensure that the team is ready for the number of mine types present in the Black Sea, it was essential to combine our efforts with XU3 of MTXG. This mission rehearsal took place in Portland Harbour in late July and demonstrated interoperability and confirmed the capability of Detect, Classify, Identify and Neutralise of both ground and drifting mines; through the combined use of REMUS 100 AUVs, Video Ray Defender ROVs, Artemis Handheld Sonar and Diver Placed Charges.

By combining direct human intervention with specialised equipment, these divers and mine warfare specialists are ready to clear the waterways and secure the vital supply lines on a global footing. This work is critical to future mission success, allowing ships to safely deliver supplies and demonstrating the essential role of specialist units in modern naval warfare.

“By combining direct human intervention with specialised equipment, these divers and mine warfare specialists are ready to clear the waterways and secure the vital supply lines on a global footing”



An EOD operator dismounts from the cab, armed with an explosive charge

BRAVO DIVING SQUADRON

BRAVO Diving Squadron provides specialist Maritime Explosive Ordnance Disposal (MEOD) and Underwater Engineering capability to the Fleet. Comprising two Diving Units – BDU1 (Plymouth) and BDU2 (Portsmouth) – the Squadron covers all MEOD tasking from the River Mersey south through Land’s End and up to Grimsby. Their remit spans a wide variety of tasks across the UK mainland in support of Operation TAPESTRY, which provides military support to the Home Office for Conventional Munitions Disposal (CMD) and Improvised Explosive Device Disposal (IEDD) both in the maritime and land domain. Operation TAPESTRY ensures that UK defence assets are available to provide specialist capability to civilian authorities, safeguarding public safety.

Each unit is regularly called out at immediate notice to assess, identify, and safely dispose of explosive ordnance. So far in 2025, Bravo Squadron has responded to 201 EOD tasks, disposing of 5622 items of ordnance and 52 IEDs. On average this sees a BRAVO Squadron team responding to a request for EOD support approximately once every 30 hours and has included grenades, mortars, landmines, artillery shells, as well as more obscure legacy munitions dating back to the Second World War.

But as a Royal Navy Clearance Diver, being an EOD specialist only forms part of the job description. As specialist divers BRAVO Squadron personnel provide underwater engineering support to the surface fleet worldwide under the direction of Navy Ops. This includes short notice tasking to support Royal Navy ships on deployed operations, ensuring their safety and operational readiness. In addition, BDU1 has taken part in several key exercises in 2025, including SPARTAN SWORD (Mar-IEDD), DEMON BEACON (IEDD), and a maritime IEDD training package in Dubai alongside UAE partners, all leading into the multinational IEDD exercise NORTHERN CHALLENGE in Iceland in September.

The Squadron has also been fundamental to recent operational success in Plymouth and Southsea. BDU1 played a key role in Operation FOSTER, which involved the successful removal of a large German Second World War air-dropped weapon discovered beneath a house in Keyham, Plymouth. The device was safely desensitised, transported out to sea, and detonated, with two operators subsequently recognised in the King’s Birthday Honours List. PO(D) Craig Maddock received the King’s Gallantry Medal, while PO(D) Paul Cartwright was awarded the King’s Commendation for Bravery.

On the 3rd of December 2024, during a seawall reinforcement project along the western edge of Southsea Common, an excavator uncovered a large munition in its scoop bucket. A civilian EOD contractor at the site quickly assessed the munition to be a WW2 German single transverse fused Spreng Cylindrisch (SC) 1000kg Air Dropped Weapon (ADW), later confirmed by an operator from BDU2. Hampshire Police were called and declared a Major Incident at the site and initiated a multi-agency response. Within half an hour of being requested, BDU2 were on the scene. A police cordon was established, and BDU2 deemed the bomb safe to move. Upon high tide, the bomb was floated and towed out of the partially submerged scoop, so that it could be lowered to the seabed and detonated safely. The bomb was successfully disposed of on the 6th of December, after several days of diving by BDU2.

BRAVO Diving Squadron’s work – whether at home protecting the public, or overseas ensuring the Royal Navy remains mission-ready – underscores its vital contribution to UK defence. Their ability to respond rapidly, operate with precision, and integrate with international partners highlights both their professionalism and the critical role they play in safeguarding lives and maintaining global maritime security.



“BRAVO Diving Squadron’s work – whether at home protecting the public, or overseas ensuring the Royal Navy remains mission-ready – underscores its vital contribution to UK defence”



EMBRACING OTAP AND OPTIMISING DTXG ASSURANCE

By: Lt Jack Squires, OIC Charlie Sqn

The Operational Training and Assurance Period (OTAP) is a unit led period of collective training that provides the framework upon which FOST can deliver 2nd Party Assurance (2PA). The intention is to provide evidence that the unit has safe training practices and remains both Safe to Operate (StO) and Operating Safely (OS). The model of unit led collective training within the bounds of OTAP is a noteworthy departure from the more familiar FOST-led collective training periods many of us will be used to, and Charlie Sqn had significant freedom in the development of a 2PA package that met the demands of the Assurance Directive. This 2PA package was based on the concept of FOST providing external assurance (2PA) to Charlie Sqn's own internal assurance (1PA) during training activity. Effectively assuring the Sqn had the organisational, administrative and command framework in place to safely operate. As the overarching document the Assurance Directive set out the intent for Charlie Sqn's broader assurance requirements whilst the Training Directive contained the granularity to direct specific activity during OTAP and prioritise capability areas and requisite assurance levels.

Diver preparing to use Artemis Pro to re-acquire UW contact.

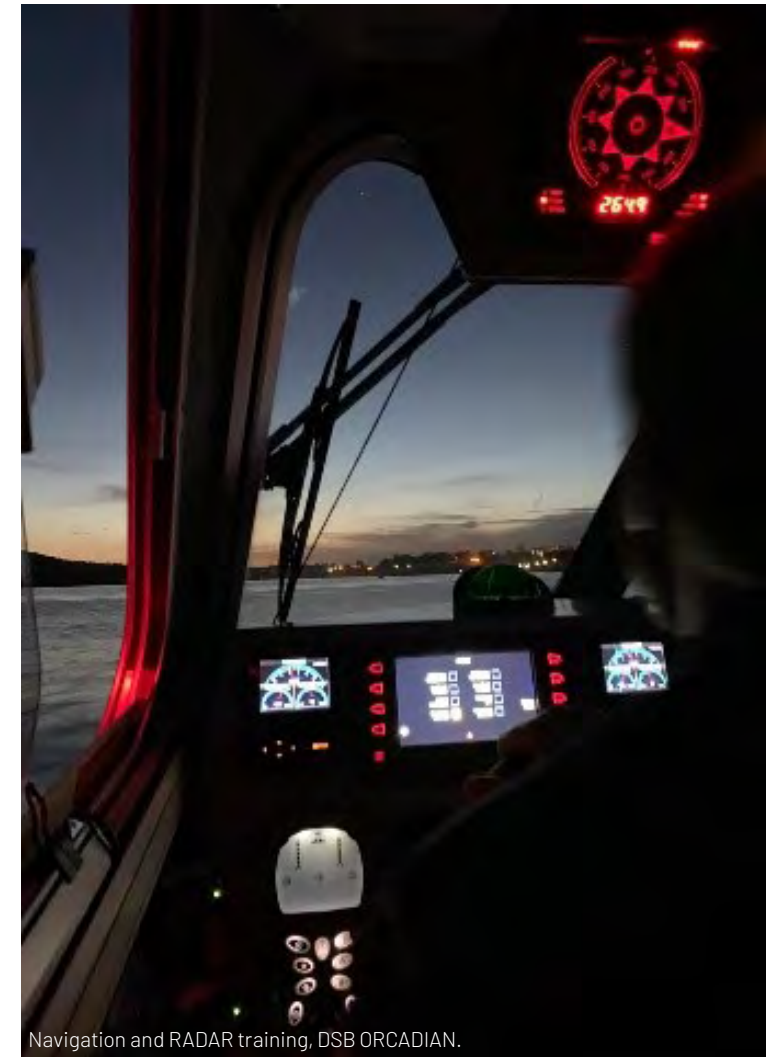
// Ettrick Bay is well known to the MCM community as the SXA's Underwater Demolition range. //

Exercise ETTRICK SPEAR is a long-standing Charlie Sqn commitment, so called for its namesake Ettrick Bay on the Isle of Bute, Scotland where live underwater demolitions are conducted as a culmination of diving and EOD training. Held at annual intervals, dependant on other commitments, activity and scope has been veered and hauled over the years to meet collective and individual training objectives. The periodicity ensures a large proportion of the team conduct 'Wet' demolitions at least annually regardless of live tasking, which by its unpredictable nature provides varying levels of experience.

Ettrick Bay is well known to the MCM community as the SXA's Underwater Demolition range. Its relative shelter, favourable underwater conditions and remote location mean it has been used extensively by MCMVs during collective training for Seafox combat round and MEOD validations, Diver Placed Charge (DPC) firings at the culmination of BOST.

As a well-established and understood Charlie Sqn training package ETTRICK SPEAR was identified as the appropriate vehicle upon which to base the collective training period required for OTAP. Being geographically displaced from Faslane allowed the incorporation of the MOVE and SUSTAIN priority 2 training objectives in addition to the PROTECT, FIND, NEUTRALISE primary objectives which were ably supported by the geography of Ettrick Bay and the Kyles of Bute.

The underpinnings of a successful OTAP, like any collective training package, were early and detailed planning and preparation. With the release of the Assurance Directive in October 2024 and the Training Directive 6 months later, Charlie Sqn were able to engage with FOST at range to establish timelines and key milestones. A Sqn led Ex ETTRICK SPEAR was conducted in November 2024 without FOST oversight, with the remit of establishing and identifying lessons, and understanding where collective training shortfalls were, thereby laying the foundations for a successful OTAP in summer 2025.



Navigation and RADAR training, DSB ORCADIAN.

The Alongside Assurance Safety Visit (AASV) was programmed to coincide with the existing date for Charlie Sqn's MEOD assurance in May 2025. The AASV is designed to align and assure (via 2PA) the administrative elements of the unit prior to conducting the deployed collective training phase (OTAP). The early conduct of organic collective training helped identify gaps between the broad remit of activity to be conducted during the coming OTAP and the Diving and EOD focussed assurance DTXG units had conducted in the past. This informed the decision to request Continuous Training (CT) from FOST, comprising Advisory Visits across the full spectrum of Sqn outputs and departments. Prior to AASV FOST supported Advisory Visits (ADVIS) including Medical, Marine Engineering, Weapons Engineering, EOD, Communications and Navigation. During this period the unit also secured audits from Clyde MT, CESO Navy for Health Safety and Environmental Policy, and PSYA for Security. This delivered a broad administrative re-gain and paved the way for a success at AASV and the subsequent OTAP.

Exercise ETTRICK SPEAR was conducted over a 5-day period in July 2025, with the Sqn establishing a Forward Operating Base (FOB) in Kames and accommodation at Portavadie, with diving and EOD activity conducted within the Kyles of Bute and Ettrick Bay areas. The MOVE element was completed on the first day of activities with FOST Navigation, Seamanship and Engineering staff embarking in Dive Support Boat (DSB) ORCADIAN to conduct a concise programme of seamanship and navigation manoeuvres before DSB ORCADIAN's departure to the Kyles of Bute. Simultaneously a road move was conducted to Portavadie allowing the deployment of the remainder of the equipment and personnel to location.

The broad remit of the exercise was to simulate the deployment of the Sqn to a significant and complex MEOD threat, as an Op TAPESTRY Military Aid to Civilian Authority (MACA) response. Charlie Sqn personnel delivering the roles of EOD Operators, Directing Staff, and Red Cell with FOST oversight. Each No.1 MEOD Operator was presented with a variation of a Conventional Munitions Disposal (CMD) task, focusing on a particular training objective, such as use of Enclosed Mine Lifting Bag (EMLB) or Tidal Lift Kit (TLK) and culminating in live explosive disposal of ordnance through either High Order (HO) or Low Order Techniques (HO/LOT).

Geographically Ettrick Bay was specifically chosen as it provided the ability to conduct UW demolitions in suitable depths of water with favourable tidal conditions, noting the area is remote enough to mitigate against delays through cordon breach. The 5-day OTAP provided three separate MEOD Operators with the opportunity to conduct a full task.

// The successful completion of ETTRICK SPEAR represented significant joint effort by Charlie Sqn and FOST //



CDLSE diver prior to placement of Diver Placed Charge in Ettrick Bay.

The significant departure from FOST Faslane Divisions ship focused assurance model to the requirement for a 'shorebased' solution posed challenges to both organisations. The ADVIS prior to AASV, not only informed Charlie Sqn's understand of the challenges ahead but also provided FOST Staff with valuable insight into some of the unique aspects of DTXG procedures that many had not previously witnessed, allowing them time to challenge and generate appropriate assurance models. A prime example of this divergence from ship-based experience being the complexity of Charlie Sqn's explosives regulations, where the unit works under RN policy for explosives embarked upon seagoing platforms, but also adheres to HMNB Clyde explosives policy ashore, overlaid with Army policy for land-based magazines, and ADR for explosives transported in vehicles. Notably, ships FGEN will not be programmed concurrent to operational tasking however DTXG Sqn's are required to remain in profile and concurrently maintain Command Plan and COMOPs tasklines against their FGO. This did present risk and some additional complexity in workforce management but was well managed by the Sqn and supported with pragmatism from FOST.

Across Charlie Sqn FGO responsibilities, the most significant element not exercised in 2025 programme was In Water Maintenance and Repair (IWMAR), conducted routinely by Charlie Sqn in support of SUBFLOT assets. Intent is to pivot focus of the next OTAP towards reactive engineering support to SUBFLOT, providing bi-annual assurance across the full spectrum of Charlie Sqn FGO outputs. Further ambition for future iterations is to include more contingent tasking elements, driving the need for increased planning agility, and Command challenge. As a principle of war, flexibility, supported by an agile Command Planning Group will realise increased lethality and military effect, something all units regardless of their 'shore-based' tag should strive towards.

The successful completion of ETTRICK SPEAR represented significant joint effort by Charlie Sqn and FOST, with each organisation working in lockstep to generate a mutually beneficial and robust 2PA framework. Early engagement, preparation and cooperation, were fundamental to Charlie Sqn securing SUBSTANTIAL assurance across all Priority 1 (PROTECT/FIND/NEUTRALISE) and Priority 2 (MOVE/SUSTAIN) capability areas. With 4 of 5 of them achieving a Very Satisfactory training performance. The LfE from this period ensures Charlie Sqn and FOST are better placed to optimise future assurance models therefore, Ex ETTRICK SPEAR and OTAP 2025 can justifiably be regarded as a success.



HMS ROYAL OAK & HER SIGNIFICANCE TO ROYAL NAVY CLEARANCE DIVERS

By: W02 J Harvey Charlie Sqn

The sinking of the ROYAL OAK was a devastating blow to the Royal Navy and the British public as it was one of the first major losses suffered by the British in World War II and served as a stark reminder of the dangers of modern warfare. Initially confused as

HMS ROYAL OAK holds huge significance in British naval history and a special place in the hearts of many as a symbol of resilience and sacrifice. I would like to take this opportunity to delve into her past, tragic loss and highlight her importance to the RN and the Clearance Diving Branch.

HMS ROYAL OAK, the eighth of her name, was a Revenge class Dreadnought battleship commissioned in 1916 first seeing combat at the Battle of Jutland during World War I. However, it was during World War II that ROYAL OAK would etch her name into history in a tragic and unforgettable way. In the early hours of 14 Oct 1939, she was struck initially by one and then three further torpedoes fired from the German submarine (U-47) under the command of Kapitänleutnant Günther Prien that had managed to penetrate the defences around Scapa Flow. The second salvo struck midships causing catastrophic damage resulting in the ship disappearing below the surface at 0129, just 13 minutes later. Tragically, of the complement of 1,234 men and boys, 835 lost their lives in the attack, 134 of the dead were boy sailors, not yet 18 years old, the largest ever such loss in a single Royal Navy action.

to the cause of the sinking, as Scapa Flow was considered impregnable to submarines, it was not until divers were sent down on the morning after the explosion and discovered the remnants of a German torpedo that the means of attack was confirmed. The Kriegsmarine and the Nazi propaganda ministry quickly capitalised on the success of the raid and on their return to Wilhelmshaven Prien and his Crew were greeted as heroes and awarded the Iron Cross First Class and Second Class respectively, Prien's award subsequently being elevated to a Knights Cross by Hitler. The First Lord of the Admiralty Winston Churchill announced the loss to the House of Commons on 17 Oct conceding that the raid had been, "a remarkable exploit of professional skill and daring". The attack highlighted the vulnerability of ships in Scapa, previously thought safe, and the need for improved defences. On Churchill's orders the approaches to Scapa Flow were sealed by concrete causeways constructed by Italian prisoners of war, these 'Churchill Barriers' were not completed until Sep 1944. Despite the tragic loss of life, her sinking became a potent symbol of British resilience and determination in the face of Nazi aggression.

DTXG Charlie Sqn
personnel at St Magnus
Cathedral, Kirkwall



Since 1980, Royal Navy Clearance Divers have maintained a close relationship with the people of Orkney, the Kirkwall Branch of the Royal British Legion, and the HMS ROYAL OAK Association, who represent the families of former crew members. In recognition of this enduring bond, Charlie Squadron of the Diving Threat Exploitation Group (DTXG) were made Honorary Freemen of the Orkney Islands in 2021. This prestigious honour will see us exercising our right to march through Kirkwall in 2026, on the fifth anniversary of the award. Charlie Squadron return annually to Orkney to change the White Ensign. In 1982, the ship's bell was retrieved by Clearance Divers and now resides in St Magnus Cathedral in Kirkwall for all to see. Recreational diving on the wreck is prohibited, and in 2002 it became a controlled site under the Protection of Military Remains Act. Diving can now take place only under special licence from the Ministry of Defence and the Naval Historical Society, who work to ensure the integrity of the site. Their combined efforts along with Charlie Sqn's ensure HMS ROYAL OAK remains the most complete example of a Dreadnought battleship in existence. Diving on the wreck is a privilege entrusted solely to DTXG, and it is one that is carried out with the greatest respect and reverence.

engineering through the survey of oil tanks and other critical infrastructure, it also provides a demanding underwater navigation challenging due to its size and intricate structure. This ensures that today's Clearance Divers who are held at very high readiness to conduct In Water Maintenance and Repair (IWMAR) in support of both SUBFLOT and SURFLOT, are ready for any operational challenge they may face. In addition to its historical significance, the wreck of the ROYAL OAK serves as an important environmental site. Over the years she has evolved into an abundant habitat for marine life, attracting a diverse array of species. By diving on the wreck, the Royal Navy can monitor the marine ecosystem and contribute to conservation efforts to protect this unique underwater environment.



HMS ROYAL OAK as she currently lies at 35m

The ROYAL OAK is not just a sunken battleship, it is a symbol of sacrifice, courage, and a memorial of remembrance as well as a site of huge historical importance. The wreck remains a poignant reminder of the sacrifices made by those who served in the Royal Navy during the WW II and remains a testament to the courage and bravery of the sailors who fought for their country and paid the ultimate sacrifice for the freedom we enjoy today. Diving on the wreck allows the Royal Navy to honour the memory of those who lost their

lives, preserve an important historical site, provide valuable training opportunities, conduct research, and contribute to environmental conservation efforts. For these reasons, it is crucial that Royal Navy Clearance divers maintain their privileged access to the site and help ensure that its legacy endures for generations to come.

The wreck of HMS ROYAL OAK provides a valuable and unique training opportunity for Charlie Squadron personnel. Its remote location, challenging conditions including strong tidal currents, low visibility, and the complexity of the site, offer an unparalleled environment for developing and refining essential underwater skills. The wreck serves as a demanding backdrop upon which to hone proficiency in underwater

lives, preserve an important historical site, provide valuable training opportunities, conduct research, and contribute to environmental conservation efforts. For these reasons, it is crucial that Royal Navy Clearance divers maintain their privileged access to the site and help ensure that its legacy endures for generations to come.



OP HIGHMAST; OPTIMISING TASK GROUP MEOD OPERATIONS

By: Lt Cdr Christopher Forster, OIC Delta Squadron Diving Unit 2



In 2025, Delta Squadron deployed as a core enabler of Op HIGHMAST, embedding a dedicated Maritime EOD (MEOD) and Underwater Force Protection (UWFP) capability directly into the Carrier Strike Group (CSG). This represented another milestone in the evolution in how MEOD and clearance diving (CD) integrate with deployed maritime forces, enabling rapid underwater threat response and high-assurance effect in support of global operations.

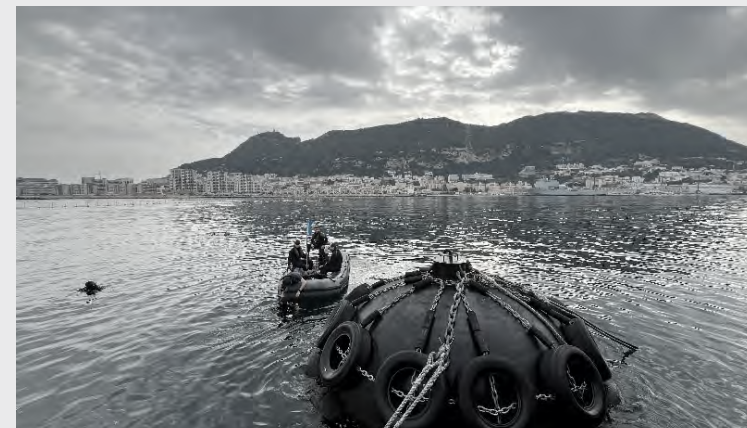
A rotating eight-person mission team (MT) embarked HMS PRINCE OF WALES, including a Command Advisor to lead the CD and MEOD elements. From the outset, the team was tasked with providing contingent MEOD response during the higher-threat transit of the Red Sea and Gulf of Aden, while delivering UWFP and in-water engineering support throughout a ten-port global deployment.

Early in the task group deployment, the MT forward deployed via Merlin Mk4 to Augusta, Sicily for NATO's Ex MED STRIKE. There, the team worked alongside Allied partners and UK DSTL, conducting interoperability training with a focus on the contemporary maritime drone threat. This early activity provided vital integration and validation of procedures before live operational tasking.

As CSG transited through the Mediterranean, Middle East and Indo Pacific including Australia and Japan, Delta Squadron MTs deployed from DTGX ahead of the Force to coordinate with host nation authorities and deliver pre-arrival berth and jetty searches. Once the ships came alongside, the teams conducted routine deterrent swims whilst maintaining a contingent MEOD response capability. These UWFP activities were a key enabler for CSG conducting high-profile port visits and ensured freedom of action throughout the deployment.



In parallel, Delta Squadron provided In-Water Maintenance and Repair (IWMAR) and engineering support through hull surveys, biofouling monitoring, and essential maintenance, all of which sustained operational readiness across CSG units. Agile, self-sufficient, and independently deployable, teams operated using organic mission kits maintained by DTGX Operational Support Squadron, with logistical and insertion support from FLS, NAS elements and shipborne engineering departments.



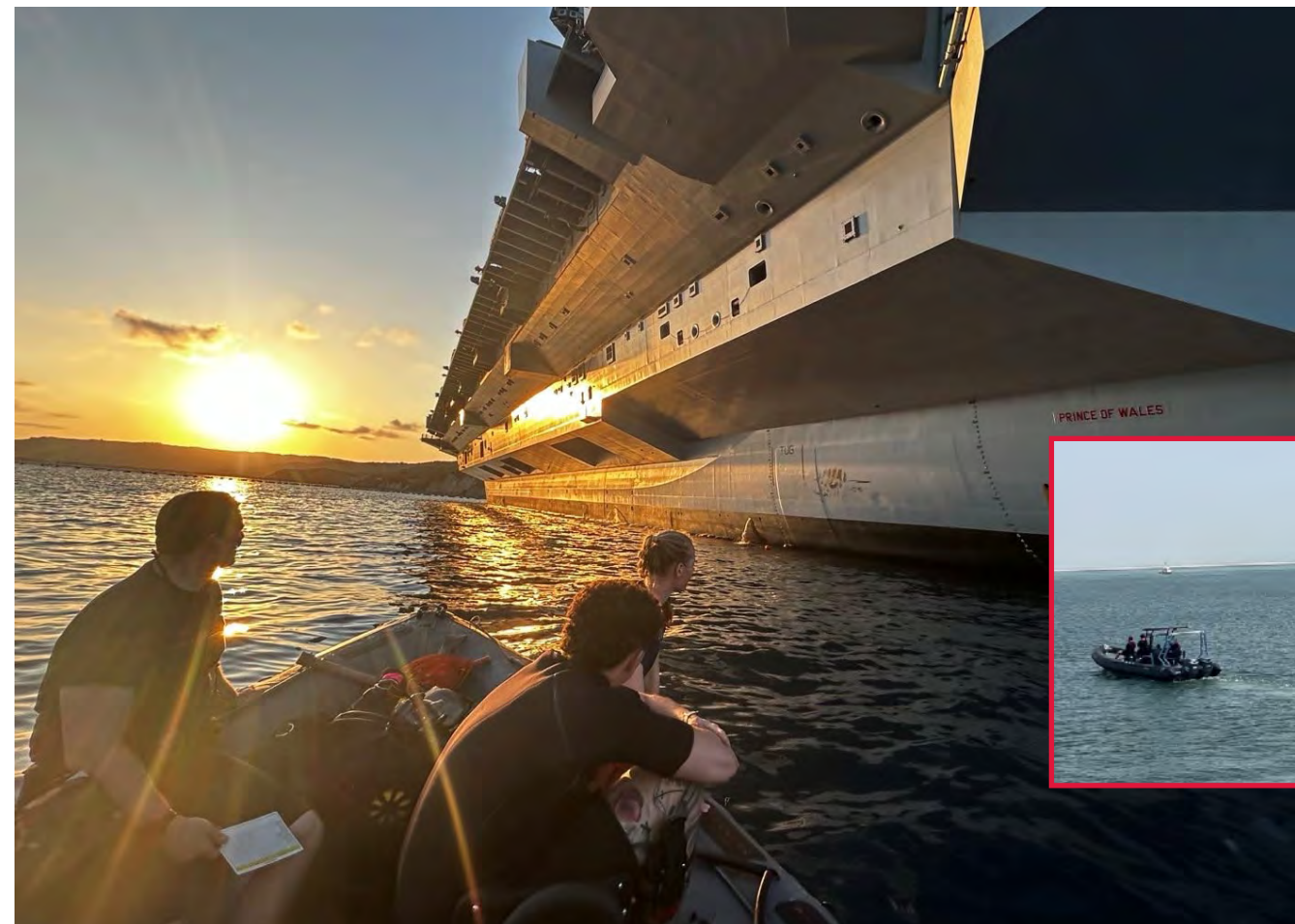


Preparation for Op HIGHMAST reflected the complexity of modern underwater threats. The team conducted IEDD and CMD training across multiple domains, including drone-borne ordnance, drifting mines and threats in close proximity to UK warships. Task-specific collaboration with the Mine Threat Exploitation Group enabled the integration of autonomous sonar and ROV technologies, significantly enhancing reconnaissance and clearance capability.

The deployment followed a robust period of force generation and NATO interoperability training in the Baltic as part of Ex OPEN SPIRIT. Working alongside Allied diving and EOD elements, Delta Squadron further honed procedures for hybrid and technologically complex maritime threats, skills directly employed during Op HIGHMAST.

The Squadron's operational tempo over the past 18 months has been relentless. Prior to Op HIGHMAST, Delta Squadron forward deployed at readiness to support Joint Task Force (JTF) humanitarian relief and stabilisation operations during increased tensions and crisis in the Eastern Mediterranean. They were prepared to: clear ports, harbours and access routes; secure high-value assets; and provide EOD response across unstable and contested environments, demonstrating the Squadron's enduring relevance across both conventional and humanitarian tasking.

Despite operating with approximately 50% workforce, Delta Squadron consistently delivered assured effect on a global scale, demonstrating operational agility, resilience, and technical precision. Whether forward deployed with the MTG or JTF, deploying independently, or supporting broader Fleet activity, the Squadron remained a critical enabler of UWFP, MEOD and deployed IWMAR and a cornerstone of task group readiness.



Op HIGHMAST confirmed the value of embedding MEOD and UWFP directly within high-readiness task groups and Delta Squadron delivered high-assurance effect from seabed to surface, securing critical port visits, protecting CSG units in high-threat environments and enabling sustained global reach. Their contribution reaffirmed the critical

role of the CD community in delivering integrated, assured effect to commanders on operations worldwide. As the threat landscape continues to evolve, Delta Squadron and DTXG remain at the centre of the Royal Navy's underwater advantage.



“ Despite operating with approximately 50% workforce, Delta Squadron consistently delivered assured effect on a global scale ”





A DIVING PERSPECTIVE FROM THE HEADQUARTERS

SABA MOD 1

By: Cdr Mark Shaw SO1 RN MDCC

Let's be honest – an article by the Headquarters diving policy and capability management team (a.k.a the MDCC) is going to appear dry in comparison to all the other exciting and interesting operational updates in this magazine. But, the work the MDCC does is the backbone of military diving; it provides the ways and means to deliver operational activity in an effective and safe manner. There is a lot going on behind the scenes to sustain and improve capability and safety, and in this article I'll update you on some of the areas we are working on.

We are in a once in a career period where 2 of the 4 core diving sets are being replaced, coupled with the inclusion of technology to drag military diving out of the historic paper-based management system and archaic methods of supervision.

// There is a lot going on behind the scenes to sustain and improve capability and safety, //

SABA MOD 1 replacement

The replacement project is at the demonstration stage and the remaining two contenders are entering scientific testing as I write, with practical ergonomic and users trails set to commence in Jan 26. The underlying requirement for the air set has generally not changed from what SABA currently delivers, but the two options being put forward offer different ways to achieve it and include updated components and technology. The competition will offer a real choice with two quite different solutions being put forward. W01(D) Jack Frost is leading the trial and is looking for volunteers to participate. This is a valuable opportunity to have a say in the diving equipment being used by the community for the next 10 years (or even longer based on previous replacement project track records!). DRI 09-025 has the detail if you want to be involved. The challenge moving forward is to ensure the successful diving set is integrated into service seamlessly and without impact to operational output. It is expected to enter service in early 2027 and details of the rollout and training, both for legacy and ab initio divers will be issued in due course.



// The future intention is to incorporate decompression computers to the diver displays with profiles being repeated on the surface. //

Telemetry

Delivering with SABA replacement is the Telemetry project. This will provide diver location/tracking, dive set information (cylinder pressures, depth, durations etc) and 2-way messaging to the surface and between divers. This will offer significantly improved situational awareness to the supervisors, freedoms to extend the operating envelope and enhance safety. Initially rolling out with the SABA replacement, the aspiration will be to extend this to mixed gas and O2 re-breathers. The future intention is to incorporate decompression computers to the diver displays with profiles being repeated on the surface. The concept is to remove blobs, lines, slates, pencils and stop watches, and move progressively and safely to a self-supervised with surface oversight method of military diving.

Mixed gas replacement

CDLSE reliability has received a lot of attention over the last few years following issues with the ECU, unknown abort messages, and DMM diaphragms crimping. To offer users reassurance (and as shown at the NMD Symposium), every occurrence is rigorously investigated by technical scientists, safety engineers and the relevant Accountable Person and Duty Holding chains. These representatives have a legal responsibility and a vested interest to ensure the safety of the diving equipment and its users; any decision to continue using a diving set is done after thorough consideration.

There are inherent risks with mixed gas diving and CDLSE itself which are recognised. These are identified, managed and reviewed by the Equipment Authority (SALMO) and the user stakeholders regularly. CDLSE has a lot of safety built into it, both through the hardware, but also in its operating instructions. It is acknowledged CDLSE has become more fragile as a result the length of time it has done in service, but all occurrences have resulted in the set 'failing safe'

i.e. always providing the diver the ability to safely abort the dive and have not challenged the already identified inherent and expected risks. CDLSE remains Safe To Operate, but do rest assured we keep it under constant review and close scrutiny – there will be no hesitation to terminate its use if there is any concern with its safety and any decision will be made outside and independent of operational pressures. What we must do is delineate between human factors occurrences (i.e. failure to follow processes) and equipment failures. Blending the two skew the perceived reputation of CDLSE reliability. The onus is on all of us to ensure timely and accurate reporting to allow the subsequent investigation and discussions to take place with the correct information.

A replacement project is funded and the Navy Command prioritisation process has just selected our project to commence (with DE&S workforce) over a number of other projects, highlighting the recognition of the importance of this equipment to Defence. We will now be engaging with all the various stakeholders to look to accelerate this procurement and deliver the replacement as quickly as possible.

In-service support

The two main diving life support contracts (currently with JFD and Northern Diver) are being re-tendered by the Equipment Authority. The contracts cover almost all equipment in use, from the main diving sets, dive suits, spares, repairs, maintenance, to Haskell training. Contracts have a lifex of 5-7 years, after which they are offered back out to industry as a new support contract competition. SALMO are packaging the contracts differently this time which will likely attract more competition and potentially a different company ultimately providing the support. The contracts are written to ensure the support covers at least the same as current, but we hope users will experience better support and availability. The new contracts should be in place by Sept 26.

Other workstreams

MDCC is also working to facilitate a number of short notice capability requirements: from helping to rapidly generate a DTXG combat swimmer as part of a NATO commitment, to providing exploitation x-rays and additional electronically heated diving systems (to be delivered by the end of the year). We are also working with numerous organisations to prepare military divers for the future, whether it be diving deeper and the equipment and policies around that, diving without the support of MCMVs, or the diving involvement as part of a wider Seabed Warfare cadre.



Mr Fred Williams, a retired US Navy Diver, has designed a tartan, pictured right, to commemorate and honour those gallant members of the Bomb and Mine Disposal community who served in WWII, as well as today's Explosives Ordnance Disposal Units and Clearance Diving Teams. Extending his reach far and wide, Mr. Williams has also corresponded with the US and Canadian navies and gained support from the Australian navy. The tartan's colours are drawn from the Union Jack and Saltire, as well as the ensigns of the Royal Navy, Royal Canadian, Royal Australian and US Navies, representing the international collaboration and shared sacrifice in bomb and mine disposal efforts.

The Royal Navy Command Secretariat has approved Mr. Williams request to submit the tartan to the Scottish Register of Tartans, and if registered successfully, officials at DTXG have expressed desires to incorporate Mr. Williams design into future mess improvements. The Royal Navy already has an officially registered tartan, but the new "Bomb & Mine Disposal" tartan has been handcrafted for the members of the diving branch and their family to proudly display their links between Scotland and the branch.

DEFENCE DIVING STANDARDS TEAM

Over the past year, the Defence Diving Standards Team (DDST) has continued its vital work in maintaining and improving safety across the Defence Diving. Since the last issue of MAD Magazine, the team has completed 41 audits, offering valuable insights into operational standards and areas for improvement.

NMD audit trends

The audits conducted across the fleet have revealed several recurring trends below. The DDST are working closely with the MDCC and DDH cells to tackle these.

Equipment logbook management

Poor maintenance of Tool and Test Kit and Diving Life Support Equipment logbooks was frequently observed. Issues included outdated versions, incomplete entries, and insufficient detail in inspection records, which compromise traceability. There were also many instances of Safety Signals and S2022as' not correctly being implemented and recorded in the logbooks. The same trend was noted in Army Military Diving.

Lapsed maintainers

Out of date maintainers were often not highlighted by DivOs 3-monthly checks or when joining the unit. The incorrect recording of regaining of maintainer currency was also a recurring trend.

Diving Project Plans (DPP) and risk assessments

These documents were generally of poor quality, despite their legal importance. There were often copy and paste errors with critical elements such as the locations of medical facilities. The phrase 'dive in accordance with JSP 286' is still commonly used as a mitigation of hazards and instructions for the task at hand. Additional O2 requirements were also often overlooked in the DPPs. There was also often no evidence of an on-site risk assessment conducted by the supervisor.

COSHH management

Increasing concern has been raised over incorrect handling of hazardous substances, likely due to insufficient training.

Should terminology

Recent DDST audits and a unit visit by the HSE have highlighted widespread misunderstanding of the term 'should' in diving policy. Many believe that 'should' directed activities can be disregarded without due diligence or record. The HSE have clarified that they would expect a 'should' to be followed unless an equally effective mitigation is in place which is recorded in the DPP or the risk assessment. DDST is now working with the diving community to clarify the regulatory meaning of 'should' and ensure consistent, risk-informed compliance.

International DSMS

The recently established approval process to enable UK military divers to dive within another nation's diving safety management system (DSMS) has been tested with the Norwegian and German Army. The process includes a DDST assurance of the nations regulations and policy, in combination with an activity-based Risk Balance Case. As well as engaging bilaterally with NATO partners on this, the UK, led by SODD, is drafting a standing arrangement with ABCANZ partners through a Memorandum of Agreement which, once formalised (expected by Nov 25), will enable ABCANZ nations' military divers to operate bilaterally more routinely within a host nation's DSMS.

Defence Diving Symposium.

On 15 Oct 2025, the DDST hosted the third Defence Diving Symposium in HMS COLLINGWOOD. Members involved in Defence Diving, both past and present, attended.

The topics covered included:

- Gareth Lock explored the barriers to learning from historical diving incidents in an organisation which experiences high turnover of staff.
- Mike O'Meara recounted the remarkable recovery of Soviet gold from HMS Edinburgh, sunk by German U-Boats in 1942.
- The Institute of Naval Medicine presented their latest research findings, shedding light on developments that impact diver health and performance.
- The Health and Safety Executive (HSE) shared key lessons from recent inspections in the commercial diving sector.
- Gavin Antony will delved into the complexities and risks of diving in environments affected by Differential Pressure (Delta-P).

Team updates

Ms Rosemary E. Lunn, the lead auditor for Joint Services Adventurous Training, was inducted into the International Scuba Diving Hall of Fame for her many years of service to the recreational diving sector. She is the first British woman to receive this prestigious honour.

Lieutenant John 'Yoyo' Ravenhall has been selected to promote to Lieutenant Commander in October and will continue his tenure within the DDST.

Chief Petty Officer William 'Willy' Sharp MBE MSM, will be retiring in November following 44 years and 9 months of esteemed service with the diving branch. He, and his wife Andrea, now look forward to travelling the world, starting with a cruise in Asia.

// On 15 Oct 2025, the DDST hosted the third Defence Diving Symposium in HMS COLLINGWOOD //

Willy being presented with his valedictory by Commander Martin Mackey atop the Loch Sloy Dam.





OPERATIONAL ADVANTAGE CENTRE (MARITIME WARFARE)

By: CPO David 'Waxy' Crayon CPO UWW MW



The Operational Advantage Centre (Maritime Warfare) (OAC(MW)) Mine Warfare section has had a busy year as we support operations in this time of transition from MCMVs to offboard systems. It is appreciated that your operational tempo has also been extremely busy but we thank you managing to share your feedback which, along with trials results from over the year, have enabled us to move forward in developing effective doctrine. The release of MoM 02/25 alongside the new Risk Reporting Tool has been a major demonstration of this. We remain steadfastly committed to easily accessible, understandable and pragmatic doctrine with the operator in mind and which, our close working relationship with the refine cell of MTXG, specifically WO 'Tug' Wilson has enabled us to do. We have also been very involved with NATO, who are living the same experiences at the moment and we not only gain some valuable lessons from them, we also ensure that UK doctrine and systems are firmly represented in future NATO MCM publications.

Another growing warfare area which directly relates to MW is Seabed Warfare (SBW) which encompasses the protection of the UK's critical underwater infrastructure. SBW is more than MW, it involves survey by hydrographic assets and defence against hostile agencies both above and below the water. That said, MCMVs and divers have been looking and dealing with objects on the seabed for decades and our practices lend themselves to playing a major part in SBW and with new MUS assets coming on line this only enhances this. OAC are ensuring that there is read across in what we do and are playing a leading role in the formulation of doctrine and tactics for this new discipline.



For your information some of our key outputs has been:

- **MOM 02/25:** Employment of Maritime Unmanned Systems (MUS) – This MOM was released to fill the gap before the new MHC classbook (BRd 9464) is released and provides detailed guidance on the deployment and operational considerations of MUS, including Unmanned Underwater Vehicles (UUV), Unmanned Surface Vessels (USV) and Remotely Operated Vehicles (ROVs).

The release of MOM 02/25 was accompanied by a presentation of the content across the Mine Warfare community with the aim to familiarise personnel with the memorandum's content and foster a shared understanding of the operational policy of MUS.

- **The Side Looking Sonar (SLS) Risk Reporting Tool.** This tool has been released in conjunction with Green Paper 01/25 – SLS Risk reporting which details the rationale behind the tool and how it evaluates risk following a mission by a SLS. It is a new toll based on EXTAC 881 for those of you who remember using it and as with all our products, your feedback is vital and much appreciated if you have any.
- **Navigational Accuracy Trials** – In June, MTXG conducted a series of trials to evaluate the navigational accuracy of most of our UUVs. They were supported by personnel and assets from Xray and Zulu squadrons, OAC, MCTA, MW Data Centre and In-service Capability Management. Understanding of navigational accuracy is key to future operations as we need to re-acquire contacts found by UUV or Towed Sonar by ROV which obviously requires accurate information. The findings have provided valuable insights into the capabilities and limitations of the RN's UUVs above and beyond navigational accuracy. This data will now inform the planning and execution of more advanced accuracy trials, scheduled for next year.

Publication of BRd 9464 and amends to BRd 8513 – As mentioned earlier Naval Warfare Publications (NWP) are producing a 7 Volume classbook along the lines of BRd 8413 and 8513 to cover the operating practices of all MHC systems. This will not be completed until 2028 but an initial (reduced) version will be released around the time of this magazine going into print. It will include overarching doctrine for the use of MHC in Volume 1 which OAC will be the primary contributor for. We are also leading the inclusion of a new chapter to BRd 8513 to detail the operating practices of operating R 300 UUVs from a Hunt Class MCMV to complement this exciting new capability.

- **Pouncer Operations** – The war in the Black Sea has regenerated the need to combat the threat of free floating mines. This has necessitated regenerating the tactics of divers being lowered from a Merlin Helicopter to neutralise this threat. Trials conducted by OAC, Delta Squadron and Merlin Force demonstrated the viability of this tactic and also a new method for attaching a diver placed charge.
- **REPMUS 2025** – The annual NATO exercise Robotic Experimentation and Prototyping using Maritime Unmanned Systems (REPMUS) exercise in Portugal has enabled many tactics to be trialled. NATO led the focus on interoperability with other nations and data management, but around this we managed to look at many other trails.



There are many other projects and issues we are dealing with but our commitment remains to maximise tactical advantage and to support the front line. We are in a unique position to enhance how we do our business but we unable to do our job without engagement with all of you whatever your position or role. Keep the feedback coming and we look forward to meeting with you when we get chance to come on trials or visit.

Please contact us also, we are keen to engage or just chat.

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ASSURING CHANGE: THE VIEW FROM FOST

By: Lt Cdr Fraser Baxter-Watt RN, Fost Ships SWO MCD

It has been a year since I joined FOST (SHIPS) – a period of real transformation, not just within the organisation, but across the wider Surface Flotilla. As Mine Warfare and Diving capabilities shift towards autonomous and distributed systems, FOST has had to move with it. We are adapting well having established processes to meet new demands, all while continuing to deliver credible training and assurance to the Fleet.



To meet these challenges, FOST is already changing how we train and assess Units. We are already changing how we assess MTXG and DTXG Squadrons. The training we deliver is shifting to match how autonomous and hybrid Units are being operated in the real world. This means units can train and operate in real world environments, beyond the classroom and established training areas to forward-staging at places like: BUTEC, Campbeltown,

and Portland Harbour. This is helping us move beyond fixed serials, opening up more adaptable and capability-focused approaches to training. Milestones are being achieved. HMS STIRLING CASTLE will receive the first full BOST package by Christmas 2025. By February 2026, we will deliver our first BOST to include MMCM systems, during YU1 BOST. And by the end of this year, every DTXG Squadron will have completed an OTAP – laying the groundwork for consistent, reliable assurance across this group, who are relatively new to FOST training and assurance. At the same time, we continue to assure Hunt-class MCMVs for the KIPION JOA and DS01 tasking, maintaining assurance from traditional hulls to the modern hybrid force.

All of this contributes to one outcome: the generation of assured capability.

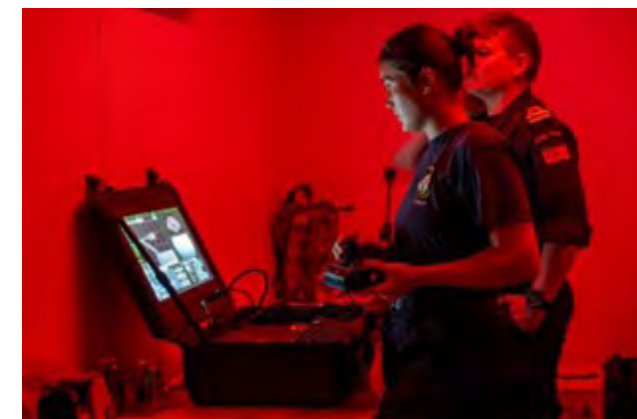
Bringing MTXG and DTXG into the FOST training and assurance model has brought these challenges into sharper focus. MTXG's Squadrons' BOST packages are still maturing. DTXG is roughly a year behind, with around half the Squadrons yet to complete an OTAP. As doctrine and kit evolve rapidly, the challenge is not just staying up to date – it is having the right people in the right place to train and assess it. FOST leans on the operational experience of staff who have recently used this equipment at sea, drawing on their insight to assess emerging TTPs. I am no exception, as a deep specialist MCD Officer with no prior MAS background, I have had to get under the skin of unfamiliar systems, supporting Units while understanding how the technology actually operates. FOST is continually adapting to meet these challenges, today and into the future.

“FOST is known for world-class training. But this strong reputation can make it harder to change how we work.”



HMS Stirling Castle trails with autonomous boats

Put simply, an assured capability is one that has been trained, assessed, and independently validated to deliver its intended operational effect. It provides Operational Commanders confidence that a Unit or system will perform as expected, in the environment it is required to operate. That is the standard we aim for. Of course, in wartime, Commanders use what is available. Lack of assurance does not mean lack of utility – it just means risk is owned and accepted at the correct level. Assured capability means a Unit has been trained, assessed, and checked by someone outside the team; the 'gold' standard. But in extremes, necessity takes precedence, and the system trusts its people to make it work (operational risk).



This development forms part of the broader force generation framework under the Ships Operating Model Optimisation (SOMO). The updated COMSURFLOT structure defines clear roles across Class Generation Authorities (CGAs) and support pillars, streamlining how ships are prepared, maintained, and assured. CGAs lead the generation process, coordinating engineering, logistics, and diving capability to improve ship availability, safety, and operational readiness. FOST's role in that process is often misunderstood – even by experienced personnel. FOST does not set the requirement. We deliver training and assurance against the direction set by the CGA, which is predominantly codified within a CGA generated Training Directive. That clarity matters. I have had conversations with units preparing for directed training challenging the focus of a package, not fully appreciating it was their own Chain of Command who directed it. That is not a gotcha moment. It is a reminder of how much the system has changed – and how important it is essential that we all understand how it now works.

Once that is understood, the relationship with FOST becomes a lot more productive. FOST are not here to catch people out. FOST are here to generate unit readiness for operations aligned with the demand set by the CGA to meet operational outputs. Gone are the days of FOST MPV operating in isolation. The PUXD element of FOST is now part of a wider and more structured organisation. It sits within FOST (Ships), under the Force Generation 2* Directorate. Since December 2023, when Full Operating Capability was reached under a 1* Commander Fleet Operational Sea Training (COMFOST), FOST has functioned as the Navy's single Training and Assurance Authority. This change was more than administrative. It marked a shift from working independently to contributing in a coordinated way. Training and assurance are now aligned under a consistent model across the Fleet.

Maintaining the standards of warfighting, while adjusting to emerging capabilities is not easy – but it is necessary. This tension is most visible in the MTXG and DTXG space, where innovation and technological development often outpaces the structures designed to support it. FOST must adapt quickly to meet the demands of assurance to units to enable safe and effective operations.

That includes being clearer in how we talk about assurance. Terms like 1st and 2nd Party Assurance (1PA and 2PA) are familiar – but not always well understood. Yet these concepts are critical to how we manage risk and generate readiness.

Understanding 1st and 2nd Party Assurance (1PA and 2PA)

1st Party Assurance (1PA):

- Done internally by the Unit.
- Involves self-assessment within the Chain of Command.
- Focuses on accountability and identifying areas for improvement.

2nd Party Assurance (2PA):

- Delivered by external teams, outside the Unit's Chain of Command.
- Provides independent assessment of performance and safety.
- In Mine Counter Measures (MCM) and Diving, this is usually done by FOST.
- A key example is the Annual Advisory and Safety Visit (AASV), which forms most of the 2PA in PUXD.

Note: Flotilla or Group staff cannot deliver 2PA – it must come from outside the immediate command structure.

Often, assurance is misunderstood with coaching. But FOST's 2PA work is not there to support – it is there to assess. That does not mean we are adversarial. It means our findings feed directly into CGA decisions on risk and readiness. When Units understand that distinction, assurance becomes part of force generation – not something bolted on at the end. And this has to be a dynamic process. The Navy is changing too fast for static assurance models. FOST must evolve as quickly as the capability it is helping to generate; aligned with the principles of spiral development.

One thing I hear repeatedly – especially during MTXG or DTXG BOSTs or OTAPs – is: "FOST needs to remember we're not a Hunt-class MCM." I have heard it enough times to know it is not a throwaway comment. The sentiment is fair. Most of our legacy OST templates were built around Hunt and Sandown class assumptions. But we must begin somewhere. We are not clinging to the past – we are adapting as we go, and every package helps refine our approach. Feedback from the front line helps us iterate faster. And we need it.

Because this cannot be top-down. If we are going to move away from legacy thinking, we need those at the sharp end – operators, Heads of Department, and Commanding Officers – to call it out when something does not fit. If a serial does not reflect the configuration of a Squadron, or assumes an embarked structure that no longer exists, we need to hear that. You can help us change.

FOST remains the centre of gravity for warfighting training in the Navy. That has not changed. But how we assure capability – and how we work with CGAs to generate readiness – is changing, because it must. We are no longer solely preparing traditional ships for familiar tasks. We are assuring people, platforms, and systems for integrated and agile operations in a world that moves fast.



So if you are part of this change – and chances are, you are – we want you engaged. Question assumptions. Share insight. And work with us to shape the future of assurance.

We are adapting. And we are assured in doing so.



OPPORTUNITIES FROM THE CM...

By: Lt Cdr Owen Fox RN

Whilst it is poor form to begin with an apology, I feel that it is important to at least explain that a short article like this could never hope to get into the full detail of the change and routine business within P&T that impacts you all - I will instead aim to highlight those that I think have the biggest impact (and of course 'opportunity', which is always welcome from a Career Manager!), and encourage you to get in touch with any questions that arise.

The second element to place upfront is an acknowledgment of the impact that workforce shortages in some areas are having against a busy and demanding operational tempo. Career Managers, and those in wider P&T, have all experienced this first hand prior to these assignments and absolutely understand the impact, and thus strive to ensure the available workforce is shared appropriately against the demands. Although it will improve (more on this later) the picture today makes some gapping inevitable - although we do our best (promise!) CMs do not have all the answers, and I warmly welcome constructive discussion if there is an opportunity to improve the picture through alternative plans.

I have no doubt that many of the articles in this edition will outline the scale and pace of change within the MW&D area - and mirroring this are the changes and improvements in the way we manage our people - who are clearly at the heart of all our operational evolutions (even autonomy!). These changes range from small tweaks to quickly deliver a better product - such as by rebalancing workforce within P&T to ensure Junior Rates have more Career Managers (both Mine Warfare and Diving branches now have their own JR CM, which is really good news and I hope you are feeling a benefit) to significant programmes delivering Ministerial intent as seen with the work to transition the RN to a 'Skills Based Organisation'.

It is this focus on skills that, I think, most neatly encapsulates the future for people management. Many of you will already be aware of the Pan-Defence Skills Framework (PDSF), or if not may well be invited to contribute to its development and implementation in the coming months, which is a large-scale undertaking to match people to jobs based on their skills and experience rather than the current dominance of Rank/Rate and Branch as the driving factor. Information on this is published regularly and in detail on MODNET by the PDSF delivery team, and I would implore all of you invited to take part in any consultations or working groups to strongly represent the unique, varied and valuable skills that the MW&D career pathways give each of us - this programme will directly impact the way we are all employed in the future.

In the more immediate timeframe we have improved our ability to assign based on skills and individual preferences rather than branch through Career Fields for Officers and CAPPS for Ratings. Career Fields are now well established, and CAPPS is evolving quickly; by the time this is published there will be a WO1 working full time to manage the first 100 positions transferred from branch plots to CAPPS and increase the number of positions assigned in this way. What does this mean for you? In short; greater flexibility when it comes to your shore time - with you given the ability to use SCIO to identify for yourself a greater choice of roles that suit your abilities and preferences to discuss with your Career Manager, rather than being limited to the positions have historically been apportioned to your branch and rate.

Regardless of the progress of PDSF it is obvious that we all have skills and experience that are invaluable to delivering world class Mine Warfare & Diving outputs - and retaining you, with these skills, is a key enabler to growing the Navy. Increasing numbers are choosing to join the RN which is really encouraging, but the single most effective route to improving our trained strength is slowing outflow. There has been a significant effort placed on retention and some of you may have been in contact with the Specialist Retention



Advisors who have been working tirelessly to understand why people choose to PVR, and whether there are things we can do to reverse this decision and keep people in. These efforts have delivered real success - but the key takeaway for me is that the options available to people to reverse their notice aren't kept behind a curtain only for those who have their notice in. If there are factors that are making you consider leaving then it is worth having as open a discussion as you feel comfortable having with your Divisional system, Chain of Command or Career Managers before taking JPA action. Whilst we can clearly not do everything for everyone, I have been surprised by how quickly a lot of problems that seemed insurmountable to the individual can be resolved once we know about them.

Which leads me neatly to the final point I'd like to highlight which is the role of Divisional Officers, Senior Rates and Leading Hands in all of the above. I genuinely believe that those of you in these roles, especially on our Ships, Crews and Teams, are the first source of Career Management for our people - I would implore you not to underestimate the influence you have to positively impact those who you have the privilege to look out for, and please do take the time when you get it to read up on some of the things, like those above, that affect all of us, especially noting that ready access to

MODNET etc is not always a given for those on deployable units. I am always delighted to spend time talking about people process and policy (someone has to be interested in it....) and so please don't hesitate to get in touch if you would like to understand something, or if you have a suggestion as to what I, or the wider P&T team, can do better (constructive please - we are all people too!). Ultimately your support is the key enabler to slowing outflow and ensuring a steady supply of reliefs for us all.

Detail on all of the above, and the myriad other P&T updates, are regularly pushed out via the Termly Divisional Briefs, Termly Letters from Head of Career Managers and the People Liaison Team as well as MODNET announcements, and the Ratings CM team and myself are always happy to visit units or host in Portsmouth - getting out and about and meeting the plots is the best part of the job.

// I genuinely believe that those of you in these roles, especially on our Ships, Crews and Teams, are the first source of Career Management for our people //

COMMAND QUALIFICATION (EXPLOITATION GROUP) (CQ(XG))

As the Royal Navy grows its pool of Maritime Unmanned Systems and develops new and exciting employment opportunities for our people, an opportunity at the forefront of it all is Command. The qualification and selection of high calibre Warfare Officers for Exploitation Group Command is essential for enduring operational success. To support this, the CQ(XG) route has been established (RNTM 07-050/25) to create a transparent and robust baseline from which to select individuals and provide career opportunity within MTXG, HXG, and DTXG; but as MUS is adopted more and more across the Royal Navy, this list will likely grow.

Often operating at the vanguard of Naval, Special and Joint Operations with niche equipment at reach, officers selected for Command positions within MTXG, DTXG or HXG need a broad portfolio of knowledge from which to deliver operational effect safely and effectively. The establishment of a the CQ(XG) pathway will baseline the knowledge and experience needed for Command selection within this emerging area of operations.

The CQ(XG) pathway blends technical expertise, operational experience, and professional education. Candidates must meet core requirements—such as sea service, navigation exams, and engineering assessments—before facing a rigorous board evaluation. From October 2026, CQ(XG) will be essential for Squadron CO roles and key appointments, ensuring the Royal Navy's future leaders are equipped for the realities of modern maritime warfare.



THE RETURN OF EXERCISE LONGLOOK – WHO WANTS TO HEAD ‘DOWN UNDER’!

The last 12 months has seen Ex LONGLOOK opportunities return to the MCM community. The longstanding initiative aims to create opportunities for short term exchanges for Royal Naval personnel with their Royal Australian and Royal New Zealand Navy counterparts.

Earlier this year LS(MW) Ewart deployed from MTXG Zulu Sqn, to join the Royal Australian Navy's (RAN) Undersea Search and Classification (USAC) Mine Warfare team for 5 months. During his time down-under, Ewart was exposed to the RAN's development of MUS capabilities. Bringing his own considerable autonomy experience, the exchange achieved exactly what LONGLOOK is designed to do, to build the information sharing partnerships between allied navies. Whilst there, he joined a 24hr operational period working with DIADS (SWEEP equivalent), and also worked extensively with Bluefin UUVs, including trialling novel launch and recovery techniques.

More recently, AB(MW) Jack Currie of the Royal Australian Navy has arrived to work with MTXG's Zulu Sqn. Although early on in his time, he has already contributed to routine operations on the Clyde, and what better way to garner experience than by Force Generating with the Squadron during their upcoming BOST.

It is intended that more LONGLOOK opportunities will present themselves as our Navies explore and operationalise MUS. If you wish to be considered for an exchange, please engage through your divisional chain.



REALLY NOW REQUIRED – MOST WILLING (RNR MW)

By: Lt Cdr Tom Worley RNR, SO2 MW

The Royal Navy Reserve Minewarfare branch is at a cross roads, from historically manning Ton Class Mine Sweepers, to forming part of the Bahrain based Mine Warfare Battle Staff, the switch to autonomy threatens to leave a 50 person branch redundant to the modern needs of the Navy: Fighting and winning.

RNR and autonomy support to MTXG

In May 2025 the RNR placed its first personnel with Yankee Squadron, following an initial staff mobilisation with Zulu Squadron in previous years. We also had the opportunity to place a staff officer with Zulu Squadron for the summer Oban deployment.

MTXG Yankee Squadron and its specialist personnel, with support from the MOD's Defence Equipment and Support (DE&S) organisation and the Royal Navy Reserve, have been helping test the autonomous capability in Weymouth.

The objective was to support the set-up of the POC and running several different autonomy serials in Portland Harbour, Weymouth. The trials, conducted in Weymouth have been aimed to rigorously test the system's capabilities. The RNR's aim is to enable ex-regulars to bring value in their field of MW specialism and bring core-reservists up to a useful level of experience in autonomy.

CPO Drake (works for the Submarine Delivery Agency as a Project Manager delivering design change for propulsion) and CPO Bowen (works with Thales to deliver the new Autonomous capability) provided experience and a fresh perspective to support deliver new capabilities and provide additional resilience to the Fleet.

RNR MW anticipate receiving permission in the Autumn term to undertake Post Mission Analysis in accordance with SURFLOT's demand. This will help process historic data, held at Taunton, into useable seabed knowledge, and further support MTXG in planning, executing and analysing data on operations.

MTXG Yankee Sqn and RNR MW

Mine lay

CPO Drake and Bowen then joined forces with WO Mills to help lay drill mines alongside an US team as part of the exercise giving the MTXG team the opportunity to discover various mine shapes and to see how the equipment performed against them. This is part of the RNR's wider enduring support to the Fleet in providing mine lay capability.

Cross RNR exercise to keep the Mediterranean open to merchant traffic

Each July sees the RNR Mine Warfare Battlestaff augmentation team join the Submarine Operations branch at a rotating location (this year sunny Gibraltar) to conduct a two week multi-threat exercise to integrate underwater teams as we would fight alongside our regular Commander Strike Forces (CSF) counterparts). The objective is to position NATO submarine and mine warfare assets to maintain the sea lines of communications against a belligerent actor in the central Mediterranean. It's a good opportunity to bring the wider RNR UWW team together, to train Officers and Senior Rates in the rigours of watch management, signal writing and safe Ship/submarine integration. During this exercise WECDIS takes the place of MTSS equipment for planning purposes. Needless to say it ends up being a kinetic rules of engagement style affair, but it is essential to ensure reservists have the confidence and capability to sit alongside regular staff.

Conscious of skill fade from RNR MWBS opportunities being scaled back with the reduction in MCMVs, Exercise Cold Response in 2026 provides the opportunity to network with CSF staff and rebuild our Mine Warfare Battlestaff experience.



We are keen to contribute, engage and participate in the exciting transition to autonomy, whilst retaining the core capabilities of MWBS augmentation and mine lay.

REALLY NOW REQUIRED, MOST WILLING.



Lt Cdr Worley RNR Visit

RNR MW exercising in Gibraltar



Scan to join

MINE WARFARE AND CLEARANCE DIVING OFFICERS ASSOCIATION

Bringing good friends and colleagues, past and present, together through events, the latest news, and a wealth of historical and corporate knowledge.

Are you sure you are a member?

You might not be! Many of our cadre's memberships have lapsed either due to migration from the old platform, or simply forgetting to renew. Fortunately, it is easy to check or sign up by scanning the QR code above.

Tadpoles wanted!

The diving font has been recommissioned and now resides in St Barbara's Church, HMS Excellent. The MCDOA hopes to reinvigorate the tradition of using this for the Christenings of Divers' children/repentant MCDOs. Please get in touch for further details.

A call to Junior Officers (MWOs and MCDOs).

Although membership remains steady at around 200, junior uptake is low. So why should you join? For starters, the first annual dinner is free! Considering your £15 annual membership, association subsidisation and a healthy pinch of diver maths, this basically puts you £52 in profit! On a more serious note, since taking on the role as secretary, I've really valued the opportunity to chat with some old school legends of our branch. I know they also appreciate this connection with serving personnel. Eligibility and joining details can be found on the website. Your membership will also financially contribute to projects such as the Vernon Monument in Gunwharf Quays, sponsorship of the DDS/DTXG families day, refurbishment of the Historical Diving Museum and other worthwhile endeavours.

Annual dinner.

By now you should have received a calling notice for the Annual Dinner and Ops Update Briefs (if not - see notice 1). The Ops Update brief will take place at Horsea Island, with the Dinner returning to HMS EXCELLENT on Fri 28 Nov. Full details can be found on the website. www.mcdoa.org

Upcoming MCDOA and other association events:

Fri 26 Sep - MWA 'Dit Session' aboard (HMS VICTORY).
Fri 10 Oct - RNCDA AGM and Annual Dinner (Venue TBA).
Fri 10 - Sun 12 Oct - TCA Reunion and AGM (Cardiff).
Thu 13 Nov - Mine Warfare Awards Dinner (Venue TBA).
Fri 28 Nov - MCDOA Annual Dinner and Ops Update Briefs (Horsea Island/HMS EXCELLENT).

Your committee:

President: Capt Ben Vickery RN
Chair: Cdr Martin Mackey RN
Vice Chairman: Lt Cdr Rob Hoole MBA RN (Retired)
Honorary Secretary and Membership Secretary:
 Lt Alex "Snowie" Snow
Honorary Treasurer: Lt Ali Aindow RN
Social Secretary/Data Protection Officer:
 Lt Cdr Kev Giles RN (Retired)
Serving and non-serving members' representative:
 Cdr Richard Watson (Retired)
Committee Member 1:
 Lt Cdr Graham "Tug" Wilson MBE RN (Retired)

MCM HONOURS AND AWARD 2024 – 2025

Congratulations to all named below. All well deserved and considering the size of the MCM cadre this shows how significant the impact across the RN and Defence we make is.

OPERATIONAL HONOURS AND NEW YEAR HONOURS LIST 2025 AND HM THE KING'S BIRTHDAY HONOURS LIST 2025

King's Gallantry Medal

Petty Officer (Diver) C A Maddock

King's Commendation for Bravery

Petty Officer (Diver) P A D Cartwright

King's Commendation for Valuable Service

Lieutenant Commander J P Bradshaw

Meritorious Service Medal

Warrant Officer 1 (Diver) K E Fenwick QGM
 Chief Petty Officer (Diver) M E Jacobs
 Chief Petty Officer (Diver) J E J Smith
 Warrant Officer 1 (Diver) R J Walker

First Sea Lord's Commendation

Leading (Diver) C Millington
 Commander D Slattery
 Commander D Starkey Royal Navy

First Sea Lord's Team Commendations

Diving & Threat Exploitation Group - Bravo Diving Unit 1
 Plymouth

Royal Navy Commendations

Leading Seaman (Mine Warfare) Z Hine
 Warrant Officer 2 (Mine Warfare) P M Wilson

Chief of the General Staff Commendation

Leading Diver R J Allan

Surface Flotilla Excellence Awards

MCM Trophy and Pennant: Awarded to the MCM crew or unit that has executed their programme to the highest of standards throughout the year and made a consistent and outstanding contribution to Service and Defence outputs. Squadron Commanders may nominate up to two crews or units from their Squadron.

MCM2 Crew 2; r/up: MTXG XRAY Unit 3

Fleet Diving Unit Trophy: Awarded to the Clearance Diving Unit or Element which has demonstrated the highest overall standards in diving capability and performance. This is open to all Diving Units and Elements including those embarked on MCMVs or in the Defence Diving School.

Echo Squadron; r/up: M2C3

Mine Warfare Annual Awards

WO1 'Dixie' Dean MBE Award: Bestowed upon an individual whose lifelong service and unwavering commitment to the MW Branch have been truly exemplary.

Yeoman Warder Terry 'Basher' Briggs

Outstanding MW JR of the Year: Awarded to the AB(MW) that has achieved excellence in the current year.

LSMW Ashley Reeves, M2C7

Outstanding WO(MW) & MW SR of the Year: Awarded to the WO or SR MW that has achieved excellence in the current year.

CPO(MW) Dave Earner, XO HMS PUNCHER

Outstanding MWO of the Year: Awarded to the MWO that has achieved excellence in the current year.

Lt Matt Bowden, XO, M2C7

Cdr Bob Hawkins MBE, Outstanding MW Team of the Year: Awarded to the MW team/section that has achieved excellence in the current year.

MTXG X-Ray Squadron Unit 3

**For all membership (or other) queries please contact the secretary
at: mcdoassociation2806@outlook.com**

Resilience Recognition’ Award: Awarded to an individual who has demonstrated exceptional courage, tenacity, and perseverance in the face of adversity. This award recognises those who, despite encountering significant obstacles, have continued to push forward, demonstrating an unwavering commitment to their goals.

AB(MW) Pompey

LD	
BALLINGER E J	MWS DDS (DTXG ECHO SQN)
BAKER R C	DTXG CHARLIE SQN
BARRATT C K	MWS DDS (DTXG DELTA SQN)
BERNARD D S	DTXG DELTA SQN
BEXON C D	MWS DDS
BRATTON M T	MWS DDS MA1 CT (DTXG BRAVO DU2)
BYATT B R	RN GIBALTAR - DS
COX S J	DTXG CHARLIE SQN
DUFFIN L M	DTXG ALPHA SQN
GROGAN-EDWARDS S R	DTXG ALPHA SQN
HARPER BAYLIS D C	DTXG DELTA SQN
HARRIS Z B	MWS DDS
HAYWOOD J H	DTXG CHARLIE SQN
HENDERSON G J	DTXG DELTA SQN
HUGHAN G M	DTXG CHARLIE SQN
JACKSON P S	MWS DDS
MARNER J R	DTXG DELTA SQN
MCCLUNG R	RN GIBALTAR - DS
PHILLIPS B G	DTXG ALPHA SQN
REED J M	RN GIBALTAR - DS
TEAL R M	DTXG ECHO SQN
TODD R D	DTXG BRAVO DU1 (RN GIBALTAR - DS)
WALLACE E	DTXG BRAVO DU2
WATSON T R	MWS DDS

Outstanding Contributions to Operations Award: Awarded to an individual who has shown outstanding operational proficiency and has made significant contributions to enhancing international collaborative efforts and interoperability.

CPO(MW) Grant Mallion, FGenCPO, MCM2

Mine Warfare Training Element (MWTE) Top Student

Award: Presented by MWA and MWTE.

AB(MW) Vivuga

LSMW	
BOSCH W F	MTM WMO FASLANE MA7 (MCM1 CREW 5)
BULICOKOCOKO I	MTXG X-RAY SQN UNIT 3 (MCM2 CREW 4)
CANAVAN E M	MCM2 CREW 4
CARTER M	MTXG X RAY SQN UNIT 1
CLEMENTS W E	MCM2 CREW 3
CONNOR K	MCM2 CREW 10
FLOYD J A	MCM2 CREW 5
FRY J E	MTXG X RAY SQN UNIT 2 (MCM2 CREW 2)
HACON J E	SURFLOT PUXD MCM2 SQUAD (MCM2 CREW 5)
HAMMILL T D	MTM RNPTS MA1 CT (MCM2 CREW 8)
HAYNES J E	MTXG YANKEE SQN UNIT 1
HOOD S J	MCM2 CREW 10 (MCM1 CREW 5)
LEEPER C E	MTM NELSON MA7 (MCM2 CREW 5)
O'MEARA O J	MTXG YANKEE SQN UNIT 2 (MASTT)
RANDLE H A	MTXG X RAY SQN UNIT 2 (MCM2 CREW 3)
REEVE E R	MCM2 CREW 4
ROOME K P	MTXG X-RAY SQN UNIT 3 (DTXG OSS)
ROWAN-THOMPSON J J	MTXG ZULU SQN UNIT 1
SHEERAN J	MTXG ZULU SQN UNIT 1
SMITH K J	MCM2 CREW 1
STEWART J A	MCM2 CREW 9
TATTERSALL J W	MTXG YANKEE SQN UNIT 1
THOMAS A E	MCM2 CREW 5
THONGYAEM C	MTXG X RAY SQN UNIT 2
TYRELL F	MCM2 CREW 2
WARD S A	MTXG ZULU SQN UNIT 1
WEBB O	MCM2 CREW 2
WELLINGTON C A	SURFLOT PUXD MCM2 SQUAD (MCM2 CREW 8)
WINDRAM A W	MTXG X RAY SQN UNIT 2 (FASLANE PBS)

PO(D)	
BUMFORD M	DTXG BRAVO DU2
CRAWFORD T H	DTXG CHARLIE SQN
HUTCHINSON J M	DEMS TRG REGT CMD SQN
LEITH I C	DTXG ALPHA SQN
LEONARD A C	DTXG DELTA SQN
LISHMAN A T	DTXG ALPHA SQN
LONG T W	DEMS TRG REGT IEDD SQN
MORRIS B S	MWS DDS
POMW	
BAMFORD J D	MCM2 CREW 4
BERTMAN J W	MTXG X RAY SQN UNIT 1
BURNS H P	MTXG YANKEE SQN UNIT 2 (MASTT)
CHANNON P	SURFLOT PUXD MTXG
DODDS J L	MTXG ZULU SQN UNIT 2 (MCM1 CREW 1)
DONKIN J M	MCM2 CREW 8
FREEMAN L M	MTXG YANKEE SQN UNIT 1
GILLIGAN M J	SURFLOT PUXD MCM2
HINE Z	SURFLOT PUXD MTXG (MASTT)
HURST C D	MTXG ZULU SQN UNIT 2 (MCM2 CREW 10)
STEVENSON-BROWN M J	MTXG X-RAY SQN UNIT 3
THORBURN J L	MTXG ZULU SQN UNIT 1
TINDAL C C	MTXG YANKEE SQN UNIT 2 (MCM2 CREW 4)
WATKINSON T J	SURFLOT ENG OP SPT FSU A SEA
YOUNG L J	MTXG YANKEE SQN UNIT 1
CPO(MW)	
BRADY L J	MTXG YANKEE SQN UNIT 1 (HMS RALEIGH - MTU)
CRAYON D	NAVY OAC MW (COMUKSTRKFOR)
KEARNS R D	SURFLOT PUXD MCM2 (MCM2 CREW 1)
O'DOWD J P	DTXG OSS
RICH C C	SURFLOT PUXD MTXG (MASTT)
SMITH C W	COMUKSTRKFOR
CPO (D)	
BAKER M S	DTXG ECHO SQN
WARRANT OFFICER 2	
KLEIN J W	MWS COLLINGWOOD - WTG (NAVY MCTA)
MARSDEN M A	MWS COLLINGWOOD - WTG
OBRIEN J L	NAVY SAFETY CENTRE (MWS DDS)
SPEER G	DTXG OSS
WAGHORN C J	DTXG BRAVO DU2

WARRANT OFFICER 1	
MORTON J	SURFLOT PUXD (MASTT)
COCKERTON L N	SURFLOT ENG DDH 1
SPENCE G W	FOST SHIPS FASLANE ENABLING SEA
WARRANT OFFICER COMMISSIONING SCHEME	
FENWICK K E	DTXG HQ
PROMOTION NOTIFICATION TO LT CDR RN	
BENNETT J M	MCM2 CREW 9
DUNBAR M N	FOST SHIPS FASLANE ENABLING SEA
EASTON B S	DTXG ALPHA SQN
HUGHES M I	DTXG ECHO SQN
MILES C A	MTM MWS COLLINGWOOD
RAVENHALL J S	NAVY SAFETY CENTRE
SQUIRES J E	DTXG CHARLIE SQN
OF3 DTXG/MTXG COMMAND POOL SELECTION NOTIFICATION	
BAILEY D J	SURFLOT PUXD MCM2
COOPER D T	MTM WMO PORTSMOUTH
GRIFFITHS D A	RN EXCHANGE USA
LEWIS T R	MTM PSG PORTSMOUTH
ROBERTSON T A	UK MCC HQ
PROMOTION NOTIFICATION TO CDR RN	
BRADSHAW J P	MCM2 CREW 4
CAMPBELL J G	MCM2 CREW 1
CLARK C S	MCM2 CREW 3
GARNER R J	MCM2 CREW 7
MAGILL A	COMUKSTRKFOR
REEVES S J	COMUKSTRKFOR
SASB2 COMMAND POOL SELECTION NOTIFICATION	
BRITTON G L	FOST SHIPS DEVONPORT
CAMPBELL J G	MCM2 CREW 1
CASTRINOYANNAKIS T	FOST SHIPS FASLANE
CLARK C S	MCM2 CREW 3
REEVES S J	COMUKSTRKFOR
SOUTHALL N C	NAVY CAREER MANAGEMENT
OF4 DTXG/MTXG COMMAND POOL SELECTION NOTIFICATION	
CAMPBELL J G	COMOPS MOC
STARKEY D S	NAVY OAC NSO

