

Hunting in warm waters: UK reinforces expeditionary MCM capability in Gulf

■ BY RICHARD SCOTT

KEY POINTS

- The UK Royal Navy has maintained a permanent MCM presence in the Persian Gulf since late 2006
- The four-ship force in theatre has been boosted by the establishment of an MCM battlestaff and the arrival of an afloat staging platform

The low cost and high disruptive potential of the sea mine has marked it out as the quintessential asymmetric threat in the maritime arena.

Mine countermeasures (MCM) therefore remain a vital enabler for maritime forces, whether to 'punch a hole' for an amphibious assault, ensure access for seaborne logistics, and/or maintain freedom of navigation for mercantile traffic along commercial sea lanes. This ability includes not only locating and neutralising mines but also identifying those areas where mines are not present.

The UK Royal Navy (RN) has historically been regarded as among the leading practitioners of MCM, and since the end of the Cold War has sought to focus its mine-warfare (MIW) capabilities on operations in littoral theatres far from home.

Building on experience

In fact, expeditionary MCM is nothing new for the RN, the service having been involved in five major mine-clearance operations over the last three decades: around the Falklands (Malvinas) in 1982; in the Red Sea in 1984; in the Persian Gulf during the 1987-88 'Tanker War'; off Kuwait in 1991; and in the approaches to southern Iraq in 2003.

However, with the prospect of offensive mining against UK ports considered relatively remote, recent years have put a new onus on operations and exercises far away from temperate northern Europe in order that equipment and operators can be honed to deal with the particular environmental challenges encountered in distant regions characterised by

■ The UK Royal Navy has four mine-countermeasures vessels forward deployed in Bahrain.



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warm and shallow waters.

It can be surmised that the Gulf remains an area of particular interest owing to its strategic significance (as much as 40 per cent of the world's oil travels through the Strait of Hormuz). Accordingly, it is an area where the RN maintains a forward-deployed MCM force, based in Bahrain.

A permanent presence of MCM assets in the Gulf region began with the 'Aintree' deployment in November 2006. This Navy Command initiative, which established a template for keeping dedicated MIW assets in theatre with crews being rotated at regular intervals, set out to address several objectives: first, to give MCM crews greater exposure to the very different operating environment encountered in the Persian Gulf (characterised by shallow waters, high salinity and high ambient water temperatures); second, to promote and share MCM experience with regional navies; and third, to circumvent the 'tyranny

of distance' and enable a rapid response to any mine threat that could endanger sea lines of communication in the region.

Ships deployed to 'Aintree' undertook both exercises and operational MCM clearance tasks. This included a prominent role in the coalition-focused Operation 'Ardent Remedy' – or Operation 'Hecate' in UK parlance – which saw extensive surveys of Mine Danger Areas in Iraqi and Kuwaiti territorial waters in April-May 2008, resulting in their reclassification as Former Mined Areas.

However, the modest resourcing appropriated to 'Aintree' saw the ships' availability and readiness profiles follow a progressively downward curve. It became clear that, to enable an expeditionary force to be truly tested in the environment, increased resources would be necessary to task and support operational force elements at the level of readiness demanded by the Permanent Joint Headquarters.

As a result, the UK has taken steps over the last nine months to bolster its expeditionary MCM capability by establishing an MCM battlestaff in Bahrain, deploying enhanced forward support to the dockside and, most recently, re-rolling the landing ship dock (auxiliary) – LSD[A] – vessel *RFA Lyme Bay* to serve as an afloat forward staging base (AFSB). Collectively, these individual threads have now been wound together to fashion an autonomous, deployable and logistically self-sustaining UK MCM Force (UKMCMFOR) the like of which the RN has not assembled since the opening phases of Operation 'Telic' in 2003.

Forward deployed

Commander Henry Merewether, normally resident at HM Naval Base Clyde in Scotland as Commander of Mine Counter Measures Squadron 1 (MCM1), has taken responsibility since October 2008 for building up UKMCMFOR in theatre. He additionally serves

as deputy to Commander, Task Force 52, which was stood up in January 2009 to co-ordinate MIW assets throughout the US Fifth Fleet's area of operations. While UK assets in theatre remain under national command, they can be assigned to Task Force 52 for exercises and operations.

"What we've done over the last few months is to create a forward-deployed expeditionary infrastructure for UK MCM forces deployed into the Joint Operations Area [JOA]," says Cdr Merewether. "The four mine-countermeasures platforms are of course at the sharp end, but they are in effect the apex of a triangle below which are the supporting components of a deployed mine warfare battle-staff [located adjacent to the UK Maritime Component Command in Bahrain]: the Forward Support Unit on the dockside; the Fleet Diving Unit [which is on call to deploy and has equipment pre-positioned in theatre]; and *Lyme Bay* as an afloat support platform. This, in aggregate, delivers that appropriately trained, supported and tasked expeditionary capability we now generally refer to as the UKMCMFOR."

Commodore Tim Lowe, who as UK Maritime Component Commander has direct control over all UK maritime forces in the JOA, adds: "We have just completed a force review and our current planning assumption is that we will retain the MCM component out here [in the Gulf] for the foreseeable future. It enables us to hone our capability in a warm, shallow-water environment where the physics governing sensor performance are very different to what we see in UK or European operating areas; and routine crew rotations have allowed us to expand and broaden our corporate knowledge.

"It also provides us with an excellent testbed for our expeditionary MCM capabilities, and it supports a programme of wider regional engagement with GCC [Gulf Co-operation Council] navies," says Cdre Lowe.

The four UK mine-countermeasures vessels (MCMVs) now in theatre comprise the Hunt-class vessels *HMS Atherstone* and *HMS Chiddingfold* (from the Portsmouth-based MCM2) and the Sandown-class craft *HMS Grimsby* and *HMS Pembroke* (from MCM1 based at Faslane). They have been deployed for an extended period as part of



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■ The Seafox mine-disposal system, seen here on board *HMS Chiddingfold*, has now entered fleetwide service.

UKMCMFOR, rotating crews at intervals of five to eight months (which ensures that lessons learned in this environment are shared across the specialisation).

'Tropicalisation'

All MCM ships are the beneficiaries of a pre-deployment 'tropicalisation' package that prepares them for operations in the high ambient temperatures of the Gulf. "This includes an enhanced air-filtration system, uprated air conditioning and improved equipment cooling," says Lieutenant Commander Mark Thompson, commanding officer of *Chiddingfold*.

"We also have an improved

communications fit, with an uplift in both HF and UHF channels and an INMARSAT satellite communications terminal. And we have a CENTRIXS [Coalition Enterprise Regional Information Exchange System] terminal, which offers both chat facilities and a common operational picture with other coalition units," he adds.

More recently, the force has received an additional tropicalisation upgrade to address the problem of marine growth in the Gulf summer months. "The high ambient water temperatures can result in up to 1 inch [2.5 cm] of growth in a week on the outside of the hull," says Lieutenant Commander Antony Crabb, command-

ing officer of *Pembroke*. "This can get into the suction inlets, obstructing the flow of water and degrading our cooling capability in the fiercely hot summer months."

The answer, for which BVT Surface Fleet is the technical lead, has been to introduce a Chlorapack system that produces a dilute solution of sodium hypochlorite for direct injection into the water circuit. *Pembroke* was the first to receive the modification during a maintenance period in late April.

Sensor suites

Although the two classes of vessel are both specialist GRP (glass-reinforced plastic) MIW platforms, they are fundamentally differentiated by their respective minehunting sensor suites. The Hunt class is fitted with the Thales Sonar 2193 wideband minehunting sonar – a hull-mounted system optimised for detecting low target-echo-strength mines at depths down to 80 m. Meanwhile the Sandown-class vessels are equipped with the Thales Sonar 2093 variable-depth sonar system, which is capable of search-and-classification operations through the water column at depths down to around 200 m.

Additionally, while the Sandown vessels were designed as single-role minehunters, the Hunts were introduced as dual-capable vessels also configured for sweeping operations (although this capability is no longer deployed with the mothballing of the Combined Influence Sweep).

"The two classes are highly complementary as a pairing," points out Cdr Merewether. "The



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■ The MCM battlestaff undertakes operations, support, communications and planning activities from containerised support modules in Bahrain.

[Hunt's] Sonar 2193 is optimised for shallow waters, and makes use of specialised transducer arrays and advanced processing techniques to vastly improve the detection of difficult targets at longer ranges. In particular, the echo structure resulting from wideband sonar significantly improves target classification.

“The Sandown class were originally designed for operations in deeper waters. But the advantage they have is that the Sonar 2093 body can be deployed to the most favourable depth in the water column to exploit the prevailing environmental conditions. This allows you to duck beneath the warm surface layer [the ‘afternoon effect’] encountered later in the day.”

Elsewhere, recent upgrades reflect an effort to promote greater standardisation between the two MCMV classes. For example, both types are equipped with the BAE Systems Integrated System Technologies NAUTIS 3 MIW command-and-control system, and likewise have received the Seafox mine-disposal system manufactured by Ultra Electronics under licence to Atlas Elektronik.

Both types also embark clearance diver teams for ordnance disposal in circumstances where remote-control techniques are considered inappropriate.

This specialist community has



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been equipped since 2008 with a new disposal device known as Vulcan, developed by ordnance disposal company Alford Technologies. “It’s a simple but very effective and flexible system that has previously been used in the land environment,” explains Lieutenant Ross Balfour, executive officer of *Pembroke*. “Vulcan fires a small [30 mm diameter] shaped charge. The system has many attachments and projectiles that adapt it for many different tasks, providing us with an organic capability for EOD [explosive ordnance disposal] or IED [improvised explosive device] clearance.”

Command and control

A UK MCM battlestaff comprising 17 personnel (of which approximately one third are reservists) and four containerised support

modules is now resident in a warehouse bay within the US Naval Support Authority in Bahrain. “We established this capability in theatre in April [2009],” says Cdr Merewether, “to provide a dedicated capability to exercise the execution of MCM command and control. In essence, we have developed a self-contained expeditionary mine-warfare infrastructure.

“The container modules have been outfitted to provide workspaces for operations, support, communications and planning activities, allowing us to deploy ‘into the field’ to support operations,” he continues.

“The operations room, for example, is manned 24/7 and incorporates the full range of UK and coalition command information systems relevant to our mission: the Mine Warfare Tactical Support System Replace-

ment [MTSS(R)], based on the Australian MINTACS system; the RN Command Support System; and a CENTRIXS terminal.”

MTSS(R) functionality includes: mission planning (for minehunting, minesweeping and clearance diver operations); MCM force assessment (calculating the combined clearance for the total MCM force); threat assessment (calculating the remaining threat to ships after clearance has taken place); and force scheduling (providing a view of tasks by date, asset and Q-route segment).

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“The MTSS(R) data and plan displays can be embedded into standard MS Office applications,” says Cdr Merewether, adding: “We have also been able to tap the IT skills of one of our reservists to write a series of new databases and executables.”

Supportability for the MCMVs in theatre was identified in 2008 as a criticality and led to the deployment of a Forward Support Unit (FSU) in Bahrain at the end of the year. The concept of an FSU is not a new one – in effect it is a containerised cluster of workshops, stores and office facilities, plus skilled personnel, deployed to provide maintenance and engineering support on the waterfront. However, the way in which it is being used by UKMCMFOR in Bahrain is subtly different, explains

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Lieutenant Jim Screen, part of the battlestaff in theatre.

“The mobile FSU concept was originally developed to support exercises and short-term operations,” he says. “What we’re now doing is establishing a scaled shore-support capability to try, as far as we can, to replicate the skills and facilities we could access in a UK dockyard.

“In addition, we have contractor support deployed from Thales and Ultra in Bahrain to provide specific expertise for the sonars and Seafox.”

Cdr Merewether adds: “The right level of support is essential out here. The environment, particularly during the summer months, is punishing on the ships. Proper engineering adaptations, combined with the right support, are musts if we are going to achieve the availability demanded of the force. We have found in the past that inadequate support will, over an extended period, lead to chronic problems with materiel and machinery.”

Staging base

The most recent development is the arrival of *Lyme Bay* to serve as an AFSB in support of UKMCMFOR. Cdre Lowe points out: “The [AFSB] is important because it allows our MCMVs to remain on task with an organic base for replenishment,



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tasking and maintenance support. The LSD(A) design is inherently flexible and we’re keen to exploit that versatility.”

A first ‘step afloat’ on to *Lyme Bay* was undertaken in early May 2009 to test the AFSB concept. “We’ve taken people and equipment subsets from both the battlestaff and FSU on board to test their integration in the ship, our intention being to effectively replicate what we have ashore,” says Cdr

Merewether. “In this first exercise we wanted to test procedures for refuelling [the MCMVs] alongside, establish communications and set up a permanent ops room facility.”

He continues: “*Lyme Bay* is an ideal platform because it has plenty of space inside and a large deck area for embarking containers and associated mission equipment. It also has its own workshop facilities and space to hold spares [for the MCMVs].

■ The Forward Support Unit provides maintenance and engineering support on the jetty in Bahrain.

“Another advantage is that *Lyme Bay* has a flight deck. This means the supply chain can reach direct into the area of operations if required.”

Expeditionary capability

Cdr Merewether believes the reinforcement of the UK’s MCM effort in the Gulf reflects a reawakening to the importance of maintaining a complete expeditionary MCM capability. “I’d characterise mine countermeasures as ‘sinusoidal’ in that it’s an area of naval operations that falls in and out of fashion. It is something we must practise regularly in those areas or environments where we think we could be called on to operate In the past it has been perhaps too easily ‘assumed away’ in exercises.

“What we’ve put together [in UKMCMFOR] brings all the pieces together to deliver a truly expeditionary capability. It reminds us that MCM is a critical enabler for maritime manoeuvre, essential for ensuring freedom of access for the joint supply chain and a vital safeguard for maritime trade.” ■

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