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UK Maritime Capability – The Missing Element

By Vice-Admiral Sir Jeremy Blackham and Air Vice-Marshal Andrew L. Roberts

Introduction

Following the 2010 Strategic Defence and Security Review (SDSR 10), the planned Nimrod MRA4 fleet was scrapped. Four years later, it is clear that this is a major loss of capability. At a time when our maritime interests are so obviously of higher profile, the need for a Maritime Patrol Aircraft (MPA) is now a topic for Government attention and brought into sharper focus by the recent events surrounding the disappearance of Flight MH370, in which a very large area of the Indian Ocean needed to be searched. A variety of MPA from several nations participated in the search, led by the Australians. Britain could not now undertake such a mission were a similar tragedy to occur in UK waters.

Ships, submarines, helicopters and fixed-wing aircraft each have their own strengths and weaknesses. Experience strongly suggests that modern maritime warfare, especially ASW, is best undertaken using a 'layered approach' with a mix of platforms. Even with the latest technology, this is likely to continue to be the case. There is no cheap panacea. MOD has now acknowledged [1] that cancellation of the Nimrod MRA4 has resulted in a significant capability gap. Because of the need for a combination of rapid response and reach, we believe that, at least in the short and medium term, this gap can be filled only by airborne platforms. As SDSR 15 approaches, it is timely to review the options likely to be available for filling the gap.

Potential Threats

Since the results of SDSR 10 were announced, there has been no reduction in the risks to our maritime interests; indeed, they have demonstrably increased. International crises are rarely predicted and the need to be able to deploy strategic assets capable of surveying wide areas of land and sea at very short notice is self-evident.

Whilst the overall number of submarines world-wide has decreased as older boats have been taken out of service, the number of countries operating submarines has increased. In excess of 40 nations now have submarines, including some (eg, India) with nuclear boats. These submarine fleets represent potential threats, not only to naval forces but also to the commercial sea lines of communication on which the UK is so dependent.

Under President Putin, the Russian Navy is known [2] to be continuing with the development of the most advanced under-water technologies, presenting an increased potential threat to the UK and, in particular, to its strategic deterrent. The Russian Navy is now procuring new, more stealthy, submarines and has resumed deployments to areas of the Atlantic of critical importance to western nations, as was illustrated by press reports in both 2010 and 2012 [3].

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1 Government Response to HCDC report on *Future Maritime Surveillance*, 5th Report of Session 2012-13, HC 110.

2 For example, see *The Sunday Times*, 12 January 2014, page 15.

3 *The Telegraph*, 27 August 2010 and *Daily Mail*, 15 August 2012.

No less significant is the evident intention of the Chinese, under President Xi Jinping, to develop a full 'blue water' naval capability in support of its stated aim of dominating the South China Sea – an area in which we have treaty obligations – and, no doubt, to be able to operate further afield in due course. Within the last 10 years, the Chinese have bought 12 KILO submarines from Russia and, with its existing fleet of diesel submarines, also plan to produce two nuclear boats of their own design per year.

Over 90% of the UK's exports and imports continue to rely on commercial shipping, much of which needs to pass through straits and other areas of potential danger where, even in peacetime, such shipping will be vulnerable to piracy and other threats.

Unexpected threats to UK interests, requiring a very rapid response for surveillance and, where appropriate, enforcement, are bound to continue to arise. For example, the threat to the Falklands and their new-found oil reserves could again require rapid reinforcement of the islands, and defence in depth of any deploying naval forces. Closer to home, in addition to the protection of the deterrent, there continues to be a need to react swiftly to any threats which may arise within the UK's 2.5 million square mile EEZ, and a legal requirement to provide adequate cover within the UK's wide area of responsibility for search and rescue (out to longitude 30º west) under the Chicago and other international conventions.

Potential Tasks

Airborne assets have a number of significant advantages in their contribution to a broad range of national and international tasks:

a. Protection of the UK's strategic nuclear deterrent.

b. Protection of UK naval forces engaged in either power projection or expeditionary operations, and of sealift supporting forces already deployed ashore.

c. Protection against threats to commercial and other shipping, including counter-piracy.

d. Protection of our EEZ, including oil rigs and shore facilities, against potential threats, including assistance in maritime counter-terrorism operations.

e. Protection of our 14 overseas territories, including the Falklands and their offshore oil resources.

f. Operations in such areas as the Caribbean in support of counter drug-running operations.

g. The gathering of acoustic and electronic/photographic intelligence.

h. Search and rescue in aid of shipping and aircraft in distress.

Unmanned Air Vehicles (UAVs)

We understand that the potential of UAVs has been examined in some depth by the MOD. As ship-based surface surveillance platforms, they can undoubtedly be cost-effective and the introduction of the Boeing *Insitu ScanEagle* as its Maritime Unmanned Air System will be a welcome addition to the Royal Navy's tactical surveillance and force protection capability. Similarly, as a purely surface surveillance asset, overcoming many of the limitations of maritime surveillance from space, the *Triton* will be a useful supplement the USN's P-8 force for surface surveillance over the vast areas of the Pacific.

UAV systems are, however, highly specialised and are not a cheap option: the combination of the air platforms and their support system can be very expensive indeed. Although capable of vast area coverage from high altitude, they lack the weapon-carrying capacity of MPA, and the flexibility to descend and then climb rapidly to identify ships visually even in bad weather. Furthermore, by comparison with aircraft, UAVs also have a number of severe operational and technical limitations. Some, such as data transfer rates and weapon loads, are likely to be insurmountable, possibly even in the longer term. In a hostile air environment the UAV is highly vulnerable to manned fighters and SAMs, and with cyber warfare on the increase, one must expect up and down-link jamming of the vital data links and potential for enemy exploitation of the link system. Nevertheless, we believe that the utility of such a system for the UK, bearing in mind the availability of operating bases and infrastructure, as a possible supplement to maritime patrol aircraft (MPA), would merit detailed examination. However, we do not believe that, given their technical limitations, UAVs would be a practicable combat-capable alternative to MPA in meeting all the potential tasks set out above.

Long Range Maritime Patrol Aircraft

MPA have the huge political and military advantage of being able to deploy very rapidly across the globe in reaction to unexpected threats, with a high speed of search on arrival and the ability to discriminate at a distance between types of vessel (both surface and sub-surface).

As has been graphically illustrated in the MH370 operations, when, *"with the distances involved, all of the aircraft were operating at close to the limit of sensible and safe operation"*[4], long range and endurance can be an important advantage in maritime operations. Persistence (ie, endurance in the operating area) can be of critical importance in ASW operations. By virtue of their considerable weapon and sensor-carrying capabilities, the larger MPA are inherently agile, flexible and adaptable. They can be modified quickly to be effective in both the maritime and overland environments, a considerable advantage when operating in the sort of environments we should expect. With the appropriate equipment fitted, future MPA would also have the flexibility to be able to provide comprehensive wide-area surveillance for land operations. For example, the Block 2 Poseidon P-8 aircraft, about to enter service with the US Navy, will be so equipped from the start and has already been designated as Multi Mission Aircraft (MMA), rather than as pure MPA. Whether or not it would be more cost-effective to acquire an MMA force, rather than specialised MPA whilst, say, running on the Sentinel Force for overland surveillance, would be for MOD to determine.

For ASW operations, speed of reaction to fleeting detections and in reaching the last known position of a submarine can be of critical importance. Frequently, it is only the MPA that can take full advantage of such intelligence in sufficient time, not only when operating independently but also when assisting naval forces. For surface surveillance using its maritime radar, the area an MPA can search in one hour is over 400 times that of a patrol craft, over 200 times that of a frigate or destroyer and some 4½ times that of a helicopter. Thus, the MPA is a very important force multiplier when naval forces are limited[5] and, given their attributes, their costs compare favourably with other elements in the maritime force mix.

Gaps and Deficiencies Likely to Remain in 2020 in the Absence of UK MPA

The withdrawal of MPA impacts severely on three critical Royal Navy capabilities: security of the nuclear deterrent, protection of the future Queen Elizabeth class aircraft carriers, and the effectiveness of the few remaining frigates and destroyers.

To protect the deterrent, the need is to detect and track potentially hostile submarines collecting intelligence or posing a threat so that our SSBNs can take appropriate evasive action in good time. With reduced acoustic advantage, and with very few UK SSN hunter killers now available, it will become increasingly difficult to locate the newer generation of 'enemy' submarines. Whilst it has been possible to use helicopter surveillance in support of the deterrent close to its base at Faslane, the range/endurance of the helicopter is relatively limited. Adequate cover therefore becomes more difficult, if not impracticable, further out and may be unworkable in SSBN patrol areas. Shortly before its withdrawal from service, the Nimrod force demonstrated that, when no RN assets were available, it was by itself quite capable of tracking one of the latest Russian submarines successfully, over several days, until it had left the area of concern. The lack of such support by British MPA now must therefore be a matter of very considerable concern for the safety and credibility of the current and future UK deterrent.

The protection of high-value iconic targets such as the UK's aircraft carriers will require defence in considerable depth. One of the most difficult threats with which to deal is a submarine attack against the carrier, with the submarine's ability to fire not only torpedoes but also very long range stand-off missiles. The UK will still have a range of surveillance resources available in 2020, operating in the audio, visual and electronic spectra, from satellites, airborne and surface platforms (both afloat and ashore) and, in some areas, sensors on the ocean floor.

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4 Australian Joint Agency Coordination Centre press conference, 28 April 2014.

5 As Rear-Admiral Corder, Comd (Ops) CINCFLEET, said in oral evidence to the House of Commons Defence Committee when discussing the withdrawal of the Nimrod, *"The uniqueness of the MPA is in its accumulation of a number of attributes. It is about persistence to a degree, by comparison with a helicopter, for example, but it is also about speed and altitude, and the capability that it can carry is significant. It is about the intelligent use of that capability, because of the crew you have on board. That is the totality of what an MPA brought to the equation."*

However, a comprehensive picture from which potential threats can properly be assessed requires both the precise position and the identity of those threats to be accurately and quickly determined if appropriate counter-measures are to be taken in time. MPA will often be the only means of achieving this.

The UK's anti-surface unit warfare capability has also been seriously reduced. In this context, the absence of the MPA-mounted maritime radar, with its unique ability to discriminate between different types of surface contact and to identify potential targets at ranges beyond 200nm, even in crowded environments and high sea states, is no longer available – again, to the detriment not only of our overall maritime surveillance capability but also of the safety of naval forces and friendly shipping generally.

In the absence of fully-equipped MPA, our capability to survey the whole of the UK's EEZ and coastal areas rapidly at short notice has also been markedly reduced, as has our ability to carry out counter terrorism, anti-piracy and drug-running operations. In our view, the UK no longer has the capacity adequately to police and secure its maritime borders and overseas interests, nor to fulfil its international obligations for search and rescue.

The assertion that, given the combination of Submarines, Frigates, Merlin helicopters, AWACS aircraft, the C-130 Hercules and Unmanned Air Vehicles, the lack of a UK MPA represents a 'tolerable risk' for UK defence[6] is wholly unconvincing. The absence of MPA has undoubtedly decreased the UK's maritime surveillance and attack capability to below an acceptable level, exacerbating the effect of the reductions in the Royal Navy's surface and submarine fleet. It is significant that, shortly after the results of SDSR 2010 were announced, the then First Sea Lord was reported in the Press to have said that the Nimrod MRA4 decision was the aspect of the savings measures with which he was most uneasy.

Collaboration with Allies

In order to economise in the use of assets for maritime surveillance, it has long been the practice to collaborate with NATO allies. However, platform availability is becoming ever more limited and recent experience in conducting such operations has cast considerable doubt on the extent to which the UK can now rely on the ability of allies to provide MPA support when required. Even the United States has had to warn its European allies that, following its decision to 'pivot' towards the Pacific at the expense of the Atlantic, US maritime surveillance support in the Atlantic will in future be more limited than hitherto. This reduced support is likely to apply equally to the UK as to other allies, and emphasises the importance of the UK acquiring its own fleet of long-range MPA, possibly supplemented by UAVs.

Conclusion

For an island nation such as Great Britain, with its world-wide interests and dependence on the sea, no longer to have an MPA capability is quite extraordinary, and has resulted in undue risk to our maritime interests. The need to reintroduce the capability into the UK's front line is extremely urgent. Action to acquire an effective long-range MPA capability (preferably with an air-to-air refuelling capability) should be set in hand without delay.

6 Government Response to HCDC report on *Future Maritime Surveillance*, 5th Report of Session 2012-13, HC 110.

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