



House of Commons  
Defence Committee

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# Future Maritime Surveillance

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**Fifth Report of Session 2012–13**

*Volume I: Report, together with formal minutes, oral and written evidence*

*Additional written evidence is contained in Volume II, available on the Committee website at [www.parliament.uk/defcom](http://www.parliament.uk/defcom)*

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## Defence Committee

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The Reports of the Committee, the formal minutes relating to that report, oral evidence taken and some or all written evidence are available in a printed volume. Additional written evidence may be published on the internet only.

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# Conclusions and recommendations

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## Strategy and threats

1. The UK has a strategic requirement for maritime surveillance as an important enabler to operations to protect UK home waters and UK global interests and commitments in both the military and non-military arenas. This requirement has developed to meet the evolution of greater non-military threats such as counter-terrorism, border control and non-state threats. This evolution is illustrated by events such as the terrorist attack in Mumbai on 26 November 2008 which was launched from the sea. We note witnesses' suggestions that the difficulty of restricting movements at sea had not gone unnoticed by the UK's potential enemies. The Government must ensure that the requirement for maritime surveillance is an integral part of the assessment of progress on the National Security Tasks in the National Security Strategy and the Military Tasks in the Strategic Defence and Security Review. This continuous assessment is essential as UK Armed Forces evolve towards Future Force 2020. (Paragraph 19)
2. We note that due to the broadness of the areas covered by maritime surveillance there is currently no one individual within the MoD who is responsible for this capability. We feel that this is a weakness which should be rectified. The new Joint Forces Command (JFC) has been established to strengthen the focus on joint enablers and on joint warfare development with a key role of being responsible for Information, Surveillance, Targeting, Acquisition and Reconnaissance (ISTAR) and for Command, Control, Communications and Computers which are key elements of maritime surveillance. The JFC should play an important role in coordinating, strengthening and delivering maritime surveillance capabilities. We welcome the intent of this improved focus that the JFC is intended to bring, but will seek assurance as the JFC develops that it is delivering the necessary coordinated output and that appropriate safeguards are in place. In response to our Report, the MoD should set out how it will assess the progress of the JFC in delivering the tasks set for it, particularly in terms of maritime surveillance. (Paragraph 21)

## Capability gaps

3. The MoD has stated that it regrets cancelling the Nimrod MRA4 programme and that in an ideal world it would have preferred to acquire a maritime patrol aircraft. We repeat the serious concerns raised in our Report on the National Security Strategy and the Strategic Defence and Security Review (SDSR) regarding the capability gaps that the Nimrod MRA4 decision has created in the UK's ability to undertake the military tasks envisaged in the SDSR and remain unconvinced that UK Armed Forces can manage this capability gap within existing resources. The MoD told us that its intention was to mitigate the impact of the Nimrod cancellation by the use of other military assets on a case by case basis, but acknowledged that there was currently no single asset or collection of assets that offset the resulting capability gap. We agree with the National Audit Office's (NAO) assessment that using other existing assets would provide a reduced capability and diverting

resources from other tasks would have wider implications for defence. Indeed in the MoD's own assessment in the NAO Report there would be significant shortfalls without significant investment, and the coordination of such assets at the right place and the right time might prove very risky. (Paragraph 31)

4. We note that no option appears to have been considered for either a sponsored or a volunteer reserve element within the crews for the new commercial arrangement [for search and rescue provision], despite the fact, that at least initially, it is widely expected that most of the pilots will be ex-Armed Forces. (Paragraph 36)
5. We note the impact of the Nimrod MRA4 decision on the UK search and rescue capability. While we accept that the UK remains committed to the International Convention on Maritime Search and Rescue and that no bilateral arrangements are required, we are surprised that the Government has not discussed the impact of the Nimrod MRA4 decision with European neighbours. It would seem prudent to do so to ensure that cooperation is maximised. (Paragraph 37)
6. We will monitor the planned changes in the provision of UK search and rescue to a new civilian-led capability and expect Ministers to play a central role in its delivery, settling disputes and ensuring coordination between departments. The Government should guard against the loss of the valuable experience that exists within the Armed Forces and we request that the Government detail the measures it has taken to prevent this. We believe that this should include considering options for retaining expertise through some form of reserve service for the pilots employed. Another concern is the impact on the provision of search and rescue for the Falkland Islands. We may wish to return to this in future years. (Paragraph 38)
7. We repeat the concerns expressed in our Report on Operations in Libya regarding the Royal Navy's ability to continue to deliver the required high levels of standing maritime commitments with fewer platforms. It is likely that risk taking will occur more frequently as the outcomes of the SDSR are implemented and the smaller number of available assets is stretched more thinly. We note that the Minister asserted that the Royal Navy was not abandoning any of its tasks. However he also accepted that the Navy is undergoing a "lean period", being heavily used and accepting a degree of risk. Maritime surveillance assets are an essential component of maritime security and these additional requirements such as Libya and the Olympics pose a potential risk to maritime security due to this overstretch and possible competing demands for those assets. This is illustrated by the UK not contributing any vessels this year to the international counter-piracy missions and the necessity to use assets and personnel between operations in the Gulf or Afghanistan for the London Olympics. (Paragraph 46)

#### **Future maritime surveillance and regeneration**

8. We note that the MoD asserted it has robust risk assessment and management procedures in place to spot any risk escalation in the maritime surveillance area. However, in practice the robustness of these procedures cannot be proven until such risks materialise and are identified and dealt with or are missed with potentially disastrous consequences. We are also less sanguine than the Minister that if an

urgent need to regenerate the maritime surveillance capability arose this could be achieved quickly. We accept that regenerating the complex capabilities of the Nimrod MRA4 would be more difficult and take longer than purchasing a platform off the shelf or putting something together that could perform an urgent maritime surveillance function. However, as the MoD has admitted in evidence that it is not currently considering the rapid regeneration of any maritime patrol aircraft platform and that it is not in discussion with industry about the regeneration of specific maritime surveillance capabilities, and given the complexities and testing required of maritime patrol aircraft platforms, we require further evidence that a sufficient level of capability could be regenerated as quickly as the Minister suggests. (Paragraph 49)

9. The provision of maritime surveillance should be considered as a whole taking into account the different, competing requirements and the risks associated with gaps and non-provision in the capability. Capability and platform decisions must be coherent and informed. We are aware that the capability gaps that exist in maritime surveillance are not limited to a maritime patrol aircraft, and include, for example, the withdrawal of Sentinel and the loss of the four Broadsword-class Type 22 Frigates' information and intelligence gathering capabilities and towed array sonar. We also note that there is the potential for other capability gaps to occur, such as when the Sea King (SKASaC) helicopter is withdrawn in 2016 to be replaced by Project CROWSNEST operating from the Merlin Mk 2. In response to our Report, the MoD should set out how it intends to deal with the increased risk caused by these emerging capability gaps. (Paragraph 53)
10. We remain concerned about the MoD's capacity to manage the risk created by the capability gap in maritime surveillance and about its ability to react to demand in the short and medium term. (Paragraph 54)
11. While we commend the MoD for undertaking studies that will help inform future decisions on the provision of maritime surveillance, we believe it would have been beneficial if these studies had been undertaken before or as part of the SDSR especially given that the MoD has admitted that the Nimrod MRA4 decision was primarily financially driven and in the short to medium term a maritime patrol aircraft would be the solution for maritime surveillance requirements. (Paragraph 58)
12. Given that the MoD described the Nimrod MRA4 decision as the most difficult in the SDSR, it is unacceptable that the MoD did not think it appropriate to inform us that it was undertaking long term capability investigations into areas directly related to the UK's maritime surveillance capabilities whilst we were undertaking our inquiry into the National Security Strategy and the Strategic Defence and Security Review. Our concerns were not limited to what the MoD was currently doing to mitigate the capability gap as we asked the Government to outline its plans for the regeneration of this capability. These studies would have been relevant to that. Indeed, the MoD told us in evidence that when responding to the concerns on Nimrod in our SDSR and NSS Report it would have been helpful if it had thought more broadly about that particular topic. Parliamentary scrutiny is not an optional extra. We are concerned that had parliamentary questions not revealed the existence of the Wide Area Maritime Underwater Search (WAMUS) study we could have

remained in ignorance of it. We expect the MoD to be more proactive and forthcoming in its provision of information to us. (Paragraph 61)

13. We note the 2010 SDSR's acknowledgement of the importance of military capabilities such as Intelligence, Surveillance, Targeting, Acquisition and Reconnaissance (ISTAR) and that UK maritime capabilities will include ISTAR based on network-enabled warships, submarines and aircraft. The capability studies already undertaken by the MoD are a good starting point and we welcome the commitment to an ISTAR work stream for the next SDSR. However, given the Secretary of State for Defence's statement that there will be a decision to be made in the next SDSR about the capability gap in maritime patrol aircraft, we recommend that work on the next SDSR should include a specific maritime surveillance work stream, involving all those, military and non-military, who make use of these assets. (Paragraph 64)
14. We are encouraged by the rigour expected to be applied to the spending of the £8 billion unallocated reserve that was announced by the Secretary of State on 14 May 2012. However, we are disappointed by the MoD's assertion that there is no requirement to buy maritime patrol aircraft (MPA) at present and that it is not currently funded in the programme. We are concerned that the MoD has not decided whether to fill the capability gap especially as the Chief of the Defence Staff has stated it was a capability that MoD wanted to have and it is still its view that a MPA is the solution for the next 20 years. (Paragraph 72)
15. We are worried about how ISTAR capabilities will be funded after the withdrawal from Afghanistan, in particular ISTAR provided under Urgent Operational Requirements, and how this will be incorporated into the core programme. We recommend that the MoD consider this matter urgently and, in response to our Report, provide details of the investment decisions on the unallocated £8 billion announced by the Secretary of State for Defence that were due to be made in July. (Paragraph 73)
16. We note that the Minister does not think it is an essential prerequisite for maritime surveillance and the attack prosecution capability to be delivered by the same asset. In response to our Report the MoD should set out the supporting evidence and likely costs of this split assets approach. (Paragraph 79)
17. We support the principle of the MoD's Seedcorn initiative as an attempt to maintain the ability to sustain both the capability to operate high level fixed-winged maritime patrol aircraft and the skills of its crews. This is an important initiative given the MoD's statement that in the medium term another model of maritime patrol aircraft will be required to fill the capability gap left by the Nimrod MRA4. However, we doubt that the Seedcorn initiative is sustainable as far as 2019, let alone to 2030, given the continued uncertainty over the long term plans for a fixed-wing MPA. The MoD should explain what work it has done to identify the point at which this initiative will no longer be effective in sustaining the ability to regenerate the capability. We recommend that the MoD undertake a lessons learned exercise for sustaining the ability to regenerate other capabilities in the future. (Paragraph 83)

18. We welcome the Minister's statement that the MoD intends to explore fully all options and alternatives for providing maritime surveillance. We agree that in the longer term unmanned systems such as unmanned aerial vehicles and lighter-than-air vehicles may well be a way forward, but also note the reported concerns regarding the limitations of using satellite technology. There are several obstacles to overcome and the MoD should keep us informed of progress on this. (Paragraph 90)
19. We note the MoD's confirmation that the requirements for unmanned aerial systems were taken into account prior to the decision to revert to a STOVL system on the new carriers and that the capability to undertake maritime surveillance using unmanned aerial vehicles (UAVs) launched from carriers would not be affected by this decision. We also note the concerns expressed to us on the limited number of UAVs that can operate in a STOVL manner and expect the MoD to keep this under review particularly if it becomes a requirement for future carrier launched UAVs undertaking maritime surveillance to have a weapons capability. We expect the MoD to keep us informed on progress of the possible use of carrier based UAVs for maritime surveillance. (Paragraph 94)
20. We note the MoD's acceptance that since the SDSR the Department's reliance on allies to provide maritime surveillance has increased, though because of the range of capabilities and sources of information still available to the Department it had not done so markedly, and that the withdrawal of Nimrod had required greater reliance on other nations to provide maritime patrol aircraft (MPA) cover. We are concerned that the Government has not thought it necessary to try to secure any additional agreements to ensure the provision of maritime surveillance capabilities. Part of the MoD's examination of future maritime surveillance requirements should include an examination of those areas where a sovereign capability would be desirable and this should feed into the Department's consideration of a new MPA and the investigation of other options such as UAVs. We support the UK's participation in the NATO Tier Two proposal for maritime surveillance and expect to be regularly updated on its progress. (Paragraph 99)

### Cross-Government cooperation

21. We commend the Government for the establishment of the Maritime Security Oversight Group (MSOG) and the National Maritime Information Centre (NMIC) which have improved cross-government cooperation on maritime surveillance issues. The MSOG's work on the development of a National Strategy for Maritime Security is an important piece of work that should be prioritised across Government. In response to our Report the Government should provide us with an update on this work and its planned timetable for it being brought to a conclusion. It must not become a stop-start endeavour. We endorse the work of NMIC as a valuable element in enhancing the national security of the UK. We will take a close interest in its work and how it develops in the future. We are not currently persuaded by the suggestion that NMIC could evolve to become a decision making centre. This would represent a considerable change in the way Government undertakes maritime security and safety operations particularly at a time of major change in the defence arena. (Paragraph 115)

22. We believe that there is room for further improvement in cross-government cooperation in maritime matters. We are not convinced that an “informal group of Ministers” is the appropriate forum for taking forward the debate on maritime surveillance issues. Although decisions may ultimately be made in Cabinet or the National Security Council, we recommend that there should be a greater level of ministerial involvement in maritime surveillance as an issue particularly given the number of cross-government interests involved and as a way of arbitrating disputes between departments and ensuring that the differing interests are focusing on the right areas at the appropriate time. In response to our Report the Government should also provide us with an update on progress on the Maritime Security Oversight Group’s work towards a single air surveillance contract. This should include the alternative options that the Government is considering as a potential model for the UK in this area. (Paragraph 116)

## Conclusions

23. We agree with our witnesses that there is a risk associated with the capability gap in maritime surveillance. We acknowledge that the Government accept this and we welcome the work being undertaken to investigate how to mitigate the risks inherent in the gap and ensure the longer term provision of maritime surveillance. The MoD asserts that it has robust risk assessment and management procedures in place to spot any risk escalation in the maritime surveillance arena, but we remain unconvinced it has the capacity to respond to any sudden escalation in that risk. Furthermore we believe the risk is likely to worsen in the medium term as further maritime surveillance capabilities are withdrawn or not yet filled. The UK’s maritime flank is likely to be increasingly exposed: this risk must be kept under close and continuous review, and we will continue to take a close interest in the MoD’s work in this area. (Paragraph 117)
24. The MoD has acknowledged that there is a strategic and national security requirement for maritime surveillance. We are concerned that the MoD is sending mixed messages in respect of the need for a maritime patrol aircraft (MPA). On one hand it says that there is no requirement for such an aircraft and that it is not funded or in the programme but on the other hand it acknowledges that its absence is a risk and something may need to be done. The MoD must explain why it is satisfactory to wait until 2015 or beyond before deciding how to close the capability gap in maritime surveillance particularly as the MoD acknowledge that a MPA is the solution in the short to medium term. We commend the work that the MoD is undertaking to explore the wide range of possibilities such as unmanned aerial vehicles, lighter-than-air vehicles and space technology, for the future long-term provision of maritime surveillance capabilities. This work must not be allowed to lose momentum, particularly as no one individual is responsible for maritime surveillance in the MoD. (Paragraph 118)
25. There is a wide demand across Government departments and agencies for maritime surveillance capabilities. The establishment of the Maritime Security Oversight Group and the National Maritime Information Centre are welcome first steps towards a more strategic and coordinated output and as a way of mitigating some of

the capability gaps. The challenge is to develop these further and we are keen to see a more prominent ministerial role particularly given the number of cross-government interests involved and as a way of arbitrating disputes between departments and ensuring that the differing interests are focusing on the right areas at the appropriate time. (Paragraph 119)



# 1 Introduction

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## Maritime surveillance

1. The UK is an island state and maritime surveillance—being aware at all times of what is happening over, on and under the surface of surrounding seas and coastal areas—is essential to its continued safety, prosperity and environment. There are many characteristics to surveillance, such as timeliness, accuracy, survivability, reliability, suitability, standardisation, discrimination, covertness and continued coverage over wide areas.<sup>1</sup> This is a broad and important capability which contributes to military areas such as anti-submarine warfare, anti-surface warfare and counter-piracy, while also having a non-military focus including search and rescue, border control and environmental protection. These differing tasks require the deployment of many different assets such as ships, submarines, aircraft, helicopters, communications, unmanned aerial vehicles and space and sea-bed based capabilities.<sup>2</sup> Maritime surveillance is a layered capability collecting information at a variety of levels: over a very wide domain using assets such as satellites; at a more precise theatre level using assets such as maritime patrol aircraft and ships; or in a specific area using assets such as unmanned aerial vehicles and helicopters. Assets can operate in more than one layer, depending on the task in hand.

2. Several Government Departments and agencies, including the Ministry of Defence (MoD), Home Office, the Department for Transport, the Department for Environment, Food and Rural Affairs, the Security Services, the Coastguard and the Border Agency have a stake in securing the use of these assets.<sup>3</sup> There are also economic considerations with the UK having a large commercial maritime fleet and conducting a high level of trade by sea which contributes considerable sums to the UK's GDP. The Government acknowledged this wide range of interests by establishing the Maritime Security Oversight Group, bringing together officials from interested government departments and agencies to provide strengthened strategic oversight of maritime security.<sup>4</sup> The Government has also established the multi-agency National Maritime Information Centre based in Northwood to provide improved situational awareness for maritime security.<sup>5</sup> The MoD and UK Armed Forces play a crucial and pivotal role in the provision of maritime surveillance capabilities to meet the various maritime surveillance requirements of UK Government Departments and agencies, NATO and other international partners.

3. The UK's maritime surveillance capability became a high profile issue following the decision in the 2010 Strategic Defence and Security Review (SDSR) to cancel the Nimrod MRA4 maritime patrol aircraft (MPA) programme.<sup>6</sup> The MRA4 was intended as a replacement for its predecessor, the Nimrod MR2, and would have provided: enhanced

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1 Ev 34

2 Ev 34

3 Ev 45

4 Ev 35

5 Ev 35

6 HM Government, *Securing Britain in an Age of Uncertainty: Strategic Defence and Security Review*, Cm 7948, October 2010, p 27

anti-submarine and anti-surface warfare; maritime reconnaissance and strategic intelligence collection; search and rescue; and an attack capability.<sup>7</sup>

4. When the decision was taken, the Nimrod MRA4 had not yet entered service and the programme had suffered several delays. Nevertheless, the decision to cancel the Nimrod MRA4 meant that the UK had no current or planned sovereign MPA capability (i.e. a capability that could be operated independently) and the MoD acknowledged that the resultant capability gap could not be completely covered by an existing single asset or collection of assets.<sup>8</sup> Despite the Nimrod MRA4 decision the SDSR asserted that the security environment the UK would face would “place a premium on particular military capabilities, including intelligence, surveillance, target acquisition and reconnaissance (ISTAR). It will demand sophisticated and resilient communications and protected mobility by land, sea and air”.<sup>9</sup>

5. In our August 2011 Report on the Strategic Defence and Security Review and the National Security Strategy, we expressed serious concerns about the capability gaps that this decision created in the UK’s ability to undertake the Military Tasks envisaged in the SDSR. We were not convinced that UK Armed Forces could manage these capability gaps within existing resources and called on the Government to outline its plans to manage them and to outline its plans for the regeneration of the capability, including the maintenance of the necessary skills and knowledge.<sup>10</sup>

## Our inquiry

6. Given the importance of maritime surveillance to the UK and our concerns about the impact of some of the SDSR decisions, on 9 February 2012 we announced an inquiry into maritime surveillance. The inquiry would examine the current and future contribution of the MoD and UK Armed Forces to the provision of maritime surveillance capabilities in an ever-changing global situation. In particular, we were interested in establishing:

- how the MoD had determined the future strategic requirements for the UK Armed Forces’ maritime surveillance capabilities, including current and evolving threats;
- what current maritime surveillance capabilities and assets would remain in service by 2020, including their specific roles, effectiveness, deployability, coordination, and interoperability; and the likely gaps and deficiencies;

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7 National Audit Office, *Ministry of Defence: Major Projects Report 2011*, HC (2010–12) 1520–I, para 3.10

8 Defence Committee, Ninth Special Report of Session 2010–12, *The Strategic Defence and Security Review and the National Security Strategy: Government Response to the Committee’s Sixth Report of Session 2010–12*, HC 1639, p 19

9 HM Government, *Securing Britain in an Age of Uncertainty: Strategic Defence and Security Review*, Cm 7948, October 2010, p 16; The SDSR went on to say that maritime capabilities would include “maritime intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capabilities based on network enabled warships, submarines and aircraft”, p 22.

10 Defence Committee, Sixth Report of Session 2010–12, *The Strategic Defence and Security Review and the National Security Strategy*, HC 761, para 137. See also: Defence Committee, Ninth Special Report of Session 2010–12, *The Strategic Defence and Security Review and the National Security Strategy: Government Response to the Committee’s Sixth Report of Session 2010–12*, HC 1639, p 19.

- what future capabilities were needed by the MoD and UK Armed Forces for maritime surveillance and what measures were being taken to address these, including applying lessons learned from recent operations;
- the costs of current and future maritime surveillance assets of UK Armed Forces;
- how the MoD intended in future to coordinate its work with other Government departments and agencies, including its effectiveness, their interaction, the lines of demarcation and the consequences for, and impact on, UK Armed Forces;
- to what extent the UK should collaborate and was collaborating with allies, including through NATO, in the provision of maritime surveillance capabilities; and
- what provision the MoD was making for the possibility that maritime surveillance forces might have to be regenerated at relatively short notice.

7. At the outset of our inquiry, we decided not to revisit the Nimrod MRA4 decision, but to look at how the resultant capability gap would be managed given that other assets were being withdrawn. We also wanted to investigate the UK's future requirements for maritime surveillance and how these would be decided and delivered in the context of the gap. We considered the capability investigations the MoD was carrying out in this area, including the study into Wide Area Maritime Underwater Search (WAMUS). Our Report examines these issues and also looks at cross-Government cooperation in the delivery of maritime surveillance.

8. We held two oral evidence sessions and our witnesses included the Minister for the Armed Forces, senior Service personnel and officials from the MoD, the Chief Coastguard and external commentators. We received 17 pieces of written evidence from individuals and organisations. A list of our witnesses and those who submitted written evidence can be found on page 57. In March 2012, we visited the National Maritime Information Centre at Northwood. We are grateful to all our witnesses, all those who submitted written evidence and those who facilitated our visit. We are also grateful for the assistance of our Specialist Advisers and the staff of the Committee during this inquiry.<sup>11</sup> During our inquiry we held part of our first oral evidence session in private to allow witnesses from the MoD to be as open as possible on classified and sensitive matters. We also received classified written evidence from the MoD. We have published as much of this evidence as possible, but, after discussion with the Department, have redacted it where necessary to exclude classified and sensitive information.

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11 The Specialist Advisers' declarations of relevant interests are recorded in the Committee's Formal Minutes which are available on the Committee's website. Mr Paul Beaver did not assist with this inquiry due to a potential relevant interest.

## 2 Strategy and threats

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### Strategic requirements for maritime surveillance

9. Given the differing and sometimes competing demands for maritime surveillance assets and access to the intelligence that they acquire, a key question is how effective are Government and MoD processes for establishing the strategic requirements for this capability and how these are translated into its provision. The Strategic Defence and Security Review (SDSR) developed the strategic objectives of the National Security Strategy (NSS) into the seven Military Tasks which in turn informed the MoD's requirements. The MoD told us UK maritime forces contribute directly to all of these tasks "and by extension their role in maritime surveillance" including playing a key role in delivering the top three tasks which were non-discretionary in nature: providing strategic intelligence; providing nuclear deterrence; and defending the UK and overseas territories. These tasks and requirements define the defence planning assumptions and the requirements for Future Force 2020.<sup>12</sup>

10. As part of assessing the strategic requirement for maritime surveillance, it was necessary for the MoD to evaluate the threats that required UK Armed Forces to have maritime surveillance capabilities. The MoD's analyses of current and future threats are informed by past experience and the current and expected future global situation and are an evolving piece of work.<sup>13</sup>

11. In the maritime domain, the MoD considered that the threats included, but were not limited to:

- Submarine threat—the proliferation of modern submarines across the world;
- Surface-borne threat—globally present (ranging from Home waters, the Falklands, Arabian Gulf, Gulf of Aden and Far East) [which] requires layered force protection of deployed Forces [...] and extends to such disciplines as Warfighting to Counter-Terrorism, Counter-Piracy and high-threat Counter Narcotics operations;
- Air threats—deployed maritime units contribute to the compilation of the air picture and complement shore-based aircraft both in detection and interception of air threat crossing maritime areas;
- Threats to resource and energy supply—such as the risk of mining / attack in strategic choke points such as Straits of Hormuz or support to the Marine Maritime Organisation for Fishery Protection;
- Threats to UK borders—counter-drugs operations and preventing illegal immigration; and
- Threat of pollution/environmental disaster—including major weather events.

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12 Q 39 and Ev 34

13 Ev 36–37

In relation to each of these threats, the purpose of maritime surveillance is to identify them and support effective decision-making at the strategic, operational, and tactical levels.<sup>14</sup>

12. These threats were expected to continue, and new threats would emerge, requiring UK Armed Forces to maintain maritime surveillance capabilities which would continue to play an important role in the key Military Tasks and act as an important capability linking strategic intelligence to actions at the tactical level:

Future Maritime Operational Concept (FMOC) lays out the strategic context and trends that the UK may face up to 2025. Although threats such as Fast Attack Craft; Improvised Explosive Devices; Submarines; and Mines are similar to those faced now, the new levels of capability and complexity of the threats bring increased risk to the UK. Understanding the 'Pattern of Life' i.e. normalised activity in the maritime domain and new threats such as Directed Energy Weapons (DEW) and Electro-Magnetic Pulse devices may proliferate and have to be countered.<sup>15</sup>

13. Some witnesses thought the strategic requirements for maritime surveillance had changed. It was now recognised that a detailed and persistent maritime surveillance picture was increasingly needed at a global level wherever UK interests were involved.<sup>16</sup> Squadron Leader Forbes (retd.) suggested that maritime surveillance was not just about seeking out military threats as during the Cold War. A new front line had evolved which required the detection of threats from individuals or rogue nations. For example, after the terrorist attacks in the US on 11 September 2001, an increased importance was attached to detecting terrorist activity.<sup>17</sup> The greater restrictions on cross-border air and land movements could not easily be duplicated at sea, which increased the significance of maritime surveillance.<sup>18</sup> This was illustrated by the terrorist attack in Mumbai on 26 November 2008 which was launched by terrorists landing from the sea. Counter-piracy was another requirement that had increased in profile.<sup>19</sup> Dr Lee Willett, Senior Research Fellow, Maritime Studies, Royal United Services Institute, suggested that to counter these threats the MoD needed to be more focused in determining maritime surveillance requirements, particularly as those groups which posed a threat to UK national security had recognised the potential advantages of using the sea for the movement and delivery of potential threats. He said:

Non-state actors and others realise and recognise that they can move men, matériel and other things by sea far more easily. The sea is a cluttered, moving environment and things on it are very small, so there needs to be a degree of persistence and a degree of focus that is much wider than perhaps had been thought about in the past.<sup>20</sup>

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14 Ev 36

15 Ev 37

16 Q 3 [Dr Willett], Q 7 [Rear Admiral Rix] and Q 39 [Edward Ferguson]

17 Ev w21 [Note: references to Ev wXX are references to written evidence published in the volume of additional written evidence published on the Committee's website].

18 Q 3

19 Q 39; see also Ev w9, Ev w21 and Ev w31.

20 Q 3

14. The MoD set out the strategic requirements for the UK's military maritime surveillance capabilities in "Defence Strategic Direction" which outlined the Defence Board's instructions on implementing the NSS and SDSR. These requirements are modified following analysis conducted against operational scenarios which might lead to changes in the agreed force structure. In addition to this, the MoD's capability branches undertake annual capability audits, the outcomes of which result in plans for how defence capabilities, including maritime surveillance would be provided in future.<sup>21</sup> The MoD said:

This process delivers a detailed understanding of the military war fighting capability for overseas operations and for the military dimension of the security of the UK and its dependent territories, including protection of the deterrent and the collection of strategic Intelligence.<sup>22</sup>

15. The MoD also used lessons that had been identified from operations and incorporated these into decisions on future maritime surveillance requirements. As an example, recent operations had made clear that there was a need for an intelligence capability using a variety of methods to be available for 24 hours a day for the duration of operations. Such lessons were absorbed into defence planning and informed the balance of investment decisions for equipment capability.<sup>23</sup>

16. The MoD had no definitive statement of the MoD's maritime surveillance requirement nor was a single person responsible for it. Edward Ferguson, Head, Defence Strategy and Priorities, MoD, thought that this was not itself a problem and resulted from the nature of the capability:

if you looked in the Ministry of Defence annals you would not find anywhere where it says, "Here is the statement of the maritime surveillance requirement for the MoD," [...] There is no single person who is responsible for formulating the maritime surveillance requirement in its own right. I do not think that that is necessarily a problem; it is the nature of the capability that it is spread in that way, across platforms the primary role of which is not always maritime surveillance but which can perform a function that involves maritime surveillance.<sup>24</sup>

17. Rear Admiral Tony Rix (retd.), former Chief of Staff, NATO Maritime Headquarters in Naples thought the MoD had a good focus on maritime surveillance in terms of awareness of changing requirements and spotting capability gaps but that it was more difficult to get the necessary capabilities into service to fill the gaps and meet the changing requirements.<sup>25</sup>

18. Rod Johnson, the Chief Coastguard, described the strategic requirement for maritime surveillance from a civilian point of view. He thought maritime surveillance was an enabler of activity designed to underpin the well-being and prosperity of European citizens.<sup>26</sup> Admiral Rix supported this view, saying, "surveillance from my operational perspective [...]"

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21 Ev 34

22 Ev 34

23 Ev 41

24 Q 39

25 Q 7

26 Q 2

was a significant enabler to all operations, particularly those that we undertook within NATO in the Mediterranean and also out in the Gulf of Aden”.<sup>27</sup>

**19. The UK has a strategic requirement for maritime surveillance as an important enabler to operations to protect UK home waters and UK global interests and commitments in both the military and non-military arenas. This requirement has developed to meet the evolution of greater non-military threats such as counter-terrorism, border control and non-state threats. This evolution is illustrated by events such as the terrorist attack in Mumbai on 26 November 2008 which was launched from the sea. We note witnesses’ suggestions that the difficulty of restricting movements at sea had not gone unnoticed by the UK’s potential enemies. The Government must ensure that the requirement for maritime surveillance is an integral part of the assessment of progress on the National Security Tasks in the National Security Strategy and the Military Tasks in the Strategic Defence and Security Review. This continuous assessment is essential as UK Armed Forces evolve towards Future Force 2020.**

### **Joint Forces Command**

20. The July 2011 Levene Report on Defence Reform included as one of its key recommendations the establishment of a Joint Forces Command (JFC) headed by a 4-star officer, “to strengthen the focus on joint enablers and on joint warfare development”.<sup>28</sup> The Levene Report listed one of the functional responsibilities of the JFC as being “the Senior Responsible Owner for Information, Surveillance, Targeting, Acquisition and Reconnaissance (ISTAR) and for Command, Control, Communications and Computers (C4)”.<sup>29</sup> Therefore the new JFC would have a role in maritime surveillance. The Government accepted these recommendations and the JFC came into being on 2 April 2012 with Air Marshal Sir Stuart Peach as its commander. Air Vice-Marshal Mark Green, Director Joint and Air Capability and Transformation, MoD, described the role of the JFC:

Its role is to make sure that we have coherence across military capability, especially in the area of information. You could argue that in the past the single Services have neglected priority investment in the networks that join defence together, we, as military officers, have been keen to invest in platforms as opposed to, necessarily, in the information gatherers and then processing that information and turning it into intelligence. The Joint Forces Commander will be the Defence Authority for information, and consequently we now have a single focus person who will be responsible for generating the information that defence needs to do its business. So, for me, and I think for the majority of my colleagues, it is a very positive step in having a single champion to provide that glue in critical areas such as the ISTAR environment.<sup>30</sup>

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27 Q 3

28 Defence Reform Steering Group, *Defence Reform: An independent report into the structure and management of the Ministry of Defence*, June 2011, p4

29 *Ibid.*, p 77

30 Q 40

21. We note that due to the broadness of the areas covered by maritime surveillance there is currently no one individual within the MoD who is responsible for this capability. We feel that this is a weakness which should be rectified. The new Joint Forces Command (JFC) has been established to strengthen the focus on joint enablers and on joint warfare development with a key role of being responsible for Information, Surveillance, Targeting, Acquisition and Reconnaissance (ISTAR) and for Command, Control, Communications and Computers which are key elements of maritime surveillance. The JFC should play an important role in coordinating, strengthening and delivering maritime surveillance capabilities. We welcome the intent of this improved focus that the JFC is intended to bring, but will seek assurance as the JFC develops that it is delivering the necessary coordinated output and that appropriate safeguards are in place. In response to our Report, the MoD should set out how it will assess the progress of the JFC in delivering the tasks set for it, particularly in terms of maritime surveillance.

## 3 The capability gap

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### Current capabilities

22. UK Armed Forces' current maritime surveillance capabilities are provided by a wide variety of platforms and assets, including:

- the Submarine Fleet;
- the Surface Fleet and the Royal Fleet Auxiliary (RFA);
- the Fleet Air Arm rotary assets;
- Fixed Wing aircraft; and
- ISTAR assets.<sup>31</sup>

23. These capabilities range from those which are systems permanently fitted or allocated to platforms to provide intimate, immediate and assured support, to specific equipments that are fitted as required dependent on the specific task being undertaken. They can be operated individually or in collaboration with other units from all three Services or with other nations.<sup>32</sup>

24. The MoD told us that “planning for contingency [operations] will always include an element of maritime surveillance and UK Joint and Allied assets can be included in such effort, probably as part of a Task Force. A recent example of such collaboration was the activation of the Response Force Task Group to provide options during the Arab Spring uprisings”.<sup>33</sup> Maritime surveillance would not necessarily be the primary role of each of these platforms and assets. For example, in respect of the surface fleet, there is a distinction between Destroyers and Frigates (Type 45 and Type 23) and Capital Ships, whose primary roles are warfighting and maritime security, to which maritime surveillance is integral, and other ships, such as RFAs and Mine Countermeasure Vessels, which would provide maritime surveillance but as part of their secondary roles.<sup>34</sup>

### Capability gaps

25. Capability gaps in maritime surveillance are widely acknowledged and this was reflected in the evidence we received, most of which suggested the gap was serious. These concerns were not only about the lack of a maritime patrol aircraft capability although this was the most prominent and regular concern expressed. Dr Willett told us the capability

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31 See Ev 37–40 for a description of the UK's current maritime surveillance capabilities, assets and platforms of each Service, including numbers, their primary and any other roles; the MoD's assessment of their effectiveness; and any decisions to extend their service, replace them or remove them from service up to 2020.

32 Ev 37

33 Ev 37

34 Ev 37; Wide area surveillance is an enabling capability that translates strategic intelligence into tactically exploitable outcomes. The effectiveness of wide area surveillance is a function of a range of factors, including environment, asset endurance, range and speed, and sensor capability, matched against the characteristics and behaviours of the target.

gap was wider than that caused by the cancellation of the Nimrod MRA4: “the critical capability gaps [...] are persistent wide area surveillance and numbers of assets. The persistent wide area surveillance gap exists because of the withdrawal of Nimrod: other assets are being used to plug this gap, yet none provide the same coverage”.<sup>35</sup> He also highlighted that the 2010 SDSR decision to withdraw the four Broadsword-class Type 22 Frigates had implications for maritime surveillance given their role in anti-submarine warfare, and the sensor equipment they possessed.<sup>36</sup>

26. The MoD accepted that there were capability gaps in maritime surveillance, resulting most notably from the withdrawal of the Type 22 Frigate and the cancellation of the Nimrod MRA4.<sup>37</sup> The MoD also acknowledged that the need for a “so-called “persistent intelligence, surveillance and reconnaissance (ISR)” capability had been identified by a number of recent operational lessons identified exercises”. While this requirement may not in practice translate into a single system or platform, the MoD judged that a “significant improvement in maritime surveillance capability (both wide area and targeted) might be provided through the use of an unmanned aerial system (UAS) deployable from the Maritime Force”.<sup>38</sup>

### **Type 22 Frigate**

27. The Type 22 Frigate was originally designed as a specialist anti-submarine platform. It evolved into a powerful surface combatant with substantial anti-surface, anti-submarine and anti-aircraft weapons systems. In addition to their armaments the vessels also possessed command and control and communications facilities and useful sensor equipment. The MoD explained that the Type 22 Frigates provided the Royal Navy’s only combination of systems enabling wide ranging monitoring of the frequencies and wavelengths of the Electromagnetic Spectrum from the sea. The MoD added that “this capability supported Indicators and Warnings, Force Protection and Situational Awareness”.<sup>39</sup> Dr Willett told us “with the four Broadsword-class Type 22 Frigates being withdrawn [...] the UK would lose the full spectrum Signals Intelligence (SIGINT) installed on these ships as well as four towed-array sonar platforms”.<sup>40</sup> When we asked Nick Harvey MP, Minister for the Armed Forces, about a replacement for the Type 22 Frigates, he confirmed that there would be no funding before 2015.<sup>41</sup>

### **Maritime patrol aircraft**

28. Most of the concern expressed to us related to the capability gaps caused by the lack of a maritime patrol aircraft capability.<sup>42</sup> We have already expressed our worries about the

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35 Ev 57

36 Ev 57

37 Ev 40

38 Ev 40

39 Ev 40

40 Ev 57

41 Q 162

42 For example see Q 8 and Q 11 [Dr Willett], Ev w2 [Rear Admiral Japp], Ev w18–19 [Air Vice-Marshal Roberts], Ev w35 [Dr Robertson] and Ev w43-44 [Airbus Military]

deletion of the MRA4 programme in our Report on the SDSR and the NSS.<sup>43</sup> These were acknowledged by the Government in its response:

We regret that we had to cancel the Nimrod MRA4 programme. It was a capability that we would, in an ideal world, have preferred to acquire.

[...]

It is true that there is currently no single asset or collection of assets that fully mitigate the resulting capability gap. This is an unwelcome consequence of the Nation's financial position and the Department's obligations to contribute to deficit reduction, but we continue to maximise the use of other assets such as Type 23 Frigates, Merlin Helicopters, Sentry and C-130 to contribute to Anti-Submarine Warfare, Search and Rescue and Maritime Counter-Terrorism where possible. In the longer term, if the Government were to conclude that it needed to close the gaps completely because future threats were to mature in a way that we can no longer manage this risk in the way we are today, some additional funding or reprioritisation would be required.<sup>44</sup>

29. The National Audit Office's (NAO) Ministry of Defence Major Projects Report 2011 considered the capability gaps left by the Nimrod MRA4 decision. The NAO Report said that according to the MoD, the Nimrod contributed to eight out of the 15 security priority risks set out in the National Security Strategy. It added that the Nimrod was uniquely able to rapidly search large maritime areas, a capability relevant to long range search and rescue, maritime counter-terrorism, gathering strategic intelligence and protecting the nuclear deterrent. The NAO Report further said that the MoD had carried out studies in the lead up to the SDSR to assess the capability gap from cancelling the Nimrod MRA4 and the MoD "assessed that cancelling Nimrod would have consequences for the military tasks that the aircraft was expected to undertake, some of them severe".<sup>45</sup> The Report also outlined the capability gaps resulting from the cancellation of the Nimrod MRA4 and some possible mitigation strategies for covering these. The NAO Report said:

Some limited analysis was carried out on how specific military tasks could be covered by a combination of Sentry surveillance aircraft, Hercules transport aircraft and the Merlin maritime helicopters. However, the Department noted that there would be 'significant shortfalls without significant investment, and the co-ordination of such assets at the right place and the right time might prove to be very risky'. [Figure 1 below] summarises the military tasks, the capability gap and an explanation of the possible mitigation strategies currently being assessed by the Department.<sup>46</sup>

The Report also asserted that there were risks in diverting other assets to cover the gaps:

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43 Defence Committee, Sixth Report of Session 2010–12, *The Strategic Defence and Security Review and the National Security Strategy*, HC 761, para 137

44 Defence Committee, Ninth Special Report of Session 2010–12, *The Strategic Defence and Security Review and the National Security Strategy: Government Response to the Committee's Sixth Report of Session 2010–12*, HC 1639, p 19

45 National Audit Office, *Ministry of Defence: Major Projects Report 2011*, HC (2010–12) 1520–I, paras 3.21–3.22

46 *Ibid.*, para 3.23

Using other existing assets would provide a reduced capability compared with Nimrod, and diverting resources from existing tasks would have wider implications for defence. The Sentry surveillance aircraft is already at minimum crew and aircraft numbers to cover NATO commitments. Using helicopters, such as the Merlin or Lynx, would affect national commitments or training of crews for other tasks. Other alternatives are fully committed to current operations.<sup>47</sup>

Figure 1

Capability gaps from cancelling the Nimrod maritime patrol aircraft with possible mitigation strategies		
Task	Capability gap with no mitigation	Possible mitigation strategy
Strategic intelligence tasks	Department would be unable to conduct an element of rapid maritime strategic intelligence gathering, as only Nimrod has the required speed and geographical range.	Very limited capability could be provided by the Sentry surveillance aircraft but with no ability to gather underwater intelligence on submarines.
Long range anti-submarine warfare	Extent to which a capability gap is acceptable depends on assumptions made about future threats, which could be affected by the decision to cancel Nimrod. This includes protection of the nuclear deterrent.	Gap could be partially mitigated by funding additional, or redeploying existing, maritime helicopters, ships and submarines to provide appropriate geographical coverage.
Support to long-range search and rescue and maritime security	Only Nimrod offered speed of response, reach, life raft deployment and long-range communications capability for long-range search and rescue and security operations. The United Kingdom will find it more difficult to meet its international commitments under the Chicago Convention to cover the area to the 30°W line of longitude. Also impacts on search and rescue for military operations, exercises, submarines in distress, assisting helicopter search and rescue operations and other security tasks.	The Hercules transport aircraft can cover the area to the 30°W line, but does so more slowly with limited endurance, and has inferior search capability. Merlin, Lynx, and Sea King airborne surveillance and control helicopters, type 23 frigates and type 45 destroyers could also be used. In all cases, the Department judges the mitigation would be 'sub-optimal' because none have the range, speed and surveillance capabilities of Nimrod.
Power projection	Nimrod provided a unique ability to rapidly search large maritime areas, including anti-submarine and anti-surface warfare. Could deploy worldwide at short notice and with minimal initial support.	The Merlin Mk1 and the Sea King airborne surveillance and control helicopters could provide similar capabilities, but speed and range are restricted as the helicopter can only deploy as fast as the ship it is based on.

NOTES

- 1 Search and rescue is the responsibility of the maritime Coastguard Agency.
- 2 The Sentry E-3D surveillance aircraft was primarily procured as an airborne early warning aircraft but has been extensively employed in the Airborne Warning and Control System (AWACS) role.
- 3 The Hercules C130J transport aircraft are used primarily to carry troops, passengers or freight.
- 4 Sea King helicopters are currently used for short range search and rescue in both the United Kingdom and the Falkland Islands.
- 5 Type 23 frigates were originally designed for the principal task of anti-submarine warfare but also undertake embargo operations using boarding teams inserted from the ship's boats or helicopter, disaster relief work and surveillance operations. They are to be replaced by the Type 26 Global Combat Ship.
- 6 Type 45 Destroyer, Lynx Wildcat and Merlin helicopters are described in detail in the project summary sheets in Volume II.

Source: National Audit Office, Ministry of Defence: Major Projects Report 2011, HC 1520-I

30. The MoD acknowledged in its evidence that due to cancellation of the Nimrod MRA4 the UK had “reduced our ability to conduct Strategic Intelligence gathering tasks, long range Anti-Submarine warfare [ASW], provide support to Search and Rescue, Maritime Security and power projection tasks”.<sup>48</sup> It was their intention “to mitigate the impact of Nimrod cancellation by the use of other military assets on a case by case basis. In relation to ASW operations, these assets include Type 23 Frigates and Merlin Mk1 helicopters.

47 Ibid., para 3.24

48 Ev 40

Additionally, Hercules C-130 and Sentry could offer a limited element of the maritime patrol capability that MRA4 would have provided. There is currently no single asset or collection of assets that offsets the resulting capability gap”.<sup>49</sup>

31. The MoD has stated that it regrets cancelling the Nimrod MRA4 programme and that in an ideal world it would have preferred to acquire a maritime patrol aircraft. We repeat the serious concerns raised in our Report on the National Security Strategy and the Strategic Defence and Security Review (SDSR) regarding the capability gaps that the Nimrod MRA4 decision has created in the UK’s ability to undertake the military tasks envisaged in the SDSR and remain unconvinced that UK Armed Forces can manage this capability gap within existing resources. The MoD told us that its intention was to mitigate the impact of the Nimrod cancellation by the use of other military assets on a case by case basis, but acknowledged that there was currently no single asset or collection of assets that offset the resulting capability gap. We agree with the National Audit Office’s (NAO) assessment that using other existing assets would provide a reduced capability and diverting resources from other tasks would have wider implications for defence. Indeed in the MoD’s own assessment in the NAO Report there would be significant shortfalls without significant investment, and the coordination of such assets at the right place and the right time might prove very risky.

### *Long-range search and rescue*

32. The NAO’s assessment of a capability gap in respect of long-range search and rescue (see Figure 1 above) was reinforced by the evidence we received. This is a major area of cross-departmental cooperation. Rod Johnson, the Chief Coastguard, outlined to us the extent of the UK’s search and rescue region and his assessment of “home waters”:

[It] extends out to 30° west. It is approximately 1 million square miles of the eastern Atlantic. It is a very interesting question that you asked about our home waters. I think that it is probably easier to consider that concept in terms of time. At an average steaming speed of 15 knots per surface ship, where is home waters? Our area of operation extends out to 30° west to just short of the Arctic circle in the north, and down to an area just north of Cape Finisterre and then down the North Sea, English Channel meridian line.<sup>50</sup>

However although this was the UK’s area of responsibility, he added:

We do not have situational awareness out to 30° west. In other words, we do not know what is there all the time, right now—only the compliant targets [ships which readily identify themselves]. But it is an area that we look at and, of course, from a search and rescue point of view any British interests anywhere can be involved or can involve us. Some examples of that would be the searches that we do routinely in the

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49 Ev 40

50 Q 6

Red Sea/Gulf of Aden area. If we get the distress alert through our satellite-based technology, we will deal with it [...].<sup>51</sup>

33. The Chief Coastguard said that in the absence of the Nimrod MRA4 operations in respect of civil maritime search and rescue, counter-pollution and traffic monitoring would have to be “simply restructured around not having it”.<sup>52</sup> The Scottish National Party, however, expressed concerns about the UK’s adherence to the International Convention on Maritime Search and Rescue:

Included in those obligations is to provide a list of assets available to undertake certain missions and also where the various co-ordination centres are located. However PQs that since the retirement of Nimrod [MR2] show that only shorter range helicopters and light aircraft are listed as being available now. They do not list the C130 Hercules—which means that the UK has no long range military fixed wing SAR aircraft listed under section 2.1.11.4 of the International Convention on Maritime Search and Rescue, raising serious questions about the UK’s ability to effectively meet this obligation. Indeed from 2005 until the retirement of the MR2 in early 2010 the aircraft provided help to neighbouring countries 23 times. It appears that since its retirement the UK has not provided fixed wing RAF top cover to any neighbouring states.<sup>53</sup>

34. The Chief Coastguard did not share these concerns. Although he accepted that the UK inventory once included Nimrod MR2 as a maritime patrol aircraft, which, in the context of search and rescue, was capable of providing a systematic search over a wide area and locating a potentially non-compliant target, there were other means at his disposal to provide that capability if it was required. The existing long-standing arrangements regarding the obtaining of assets from other Atlantic region states would continue.<sup>54</sup> Air Vice-Marshal Green added:

when the Chief Coastguard gave evidence, he wrapped this sort of issue up very well. When something happens, it is effectively within his authority—the coastguard’s authority—to start to react to that incident, and he will use whatever assets are available at the time and are nearest to the point of the concern in order to alleviate the situation or the risk. In that example, those assets were available. There is no reason to suspect that if a Nimrod had been available, it would have been able to react any faster to [a particular incident] than those that were actually closer to the incident in question.<sup>55</sup>

35. There does not appear to have been any discussion of the impact of the Nimrod MRA4 decision on search and rescue provision with European neighbours. Nor has there been any attempt to negotiate with France or with Luxembourg (a small landlocked country which has three MPAs) to provide support for the UK search and rescue capability. Tom

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51 Q 6

52 Q 10

53 Ev w26

54 Q 12

55 Q 146

McKane, Director General for Security Policy, MoD, said “there is no specific new agreement under the UK-France defence treaty that addresses search and rescue [...]” and he was unaware of any discussions with Luxembourg.<sup>56</sup> When we tried to establish why no such negotiations or discussions had taken place, Air Vice-Marshal Green told us “long-range search and rescue is a responsibility that we have all signed up to through previous conventions. Consequently, it is the standard protocol that if you are in that region, you will react to that particular incident. There does not need to be a bilateral arrangement with a particularly nation to satisfy a search and rescue need; the arrangements are already in place within a broader arrangement”.<sup>57</sup>

36. In addition to the Nimrod MRA4 decision another major change to the provision of search and rescue was announced to the House of Commons on 28 November 2011.<sup>58</sup> The then Secretary of State for Transport announced that a new civilian-led UK-wide search and rescue capability would be established and that military involvement in search and rescue would cease once that capability was fully operational. **We note that no option appears to have been considered for either a sponsored or a volunteer reserve element within the crews for the new commercial arrangement, despite the fact, that at least initially, it is widely expected that most of the pilots will be ex-Armed Forces.**

37. **We note the impact of the Nimrod MRA4 decision on the UK search and rescue capability. While we accept that the UK remains committed to the International Convention on Maritime Search and Rescue and that no bilateral arrangements are required, we are surprised that the Government has not discussed the impact of the Nimrod MRA4 decision with European neighbours. It would seem prudent to do so to ensure that cooperation is maximised.**

38. **We will monitor the planned changes in the provision of UK search and rescue to a new civilian-led capability and expect Ministers to play a central role in its delivery, settling disputes and ensuring coordination between departments. The Government should guard against the loss of the valuable experience that exists within the Armed Forces and we request that the Government detail the measures it has taken to prevent this. We believe that this should include considering options for retaining expertise through some form of reserve service for the pilots employed. Another concern is the impact on the provision of search and rescue for the Falkland Islands. We may wish to return to this in future years.**

### ***The capability gap and standing maritime tasks***

39. The Royal Navy has a number of standing maritime tasks. These include the Response Force Task Group (the core of the UK’s maritime contingent capability held at high readiness to respond to unexpected global events), the Fleet Ready Escort, maintained at high readiness around the UK for short-notice global deployment), a nuclear ballistic submarine (to provide the UK’s continuous at sea nuclear deterrent), geographical

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56 Qq 147–148

57 Q 149

58 HC Deb, 28 November 2011, cols 52–53WS

deployments, Task Forces, Mine Countermeasures Forces and the Fishery Protection Squadron. In our report on the operation in Libya, we noted that important tasks, such as the Fleet Ready Escort and counter-drugs operations, were not able to be carried out due to meeting the Libya commitment, and concluded that:

Given the continued high levels of standing maritime commitments it is likely that this type of risk taking will occur more frequently as the outcomes of the SDSR are implemented. This will be a significant challenge for the Royal Navy and the MoD who should outline their plans to meet this challenge in response to our Report.<sup>59</sup>

40. In its response to our Report, the MoD said that although it recognised that UK Armed Forces were only able to undertake so many tasks at the same time, it did not expect “that after 2015 our Armed Forces will be operating routinely at the level of intensity they have sustained in recent years”. It assured us that if UK Armed Forces were required to undertake specific operations rigorous planning procedures were in place to generate the capabilities required and identify risks and that careful examination would take place on the prioritisation of other tasks depending on the strategic context and priorities at the time.<sup>60</sup>

41. Concerns regarding the UK’s ability to meet its standing maritime tasks were also expressed to us during this inquiry. Dr Willett thought that the Libya operation provided examples of the challenges that would be faced in the future in meeting these tasks as, although the operation had been in the UK’s national interest, the Royal Navy had been required to withdraw assets from other tasks, such the South Atlantic patrols and counter-piracy activities. He suggested that gaps were appearing in the UK’s maritime surveillance capability:

You have a web of a number of capabilities—a number of systems—doing different things that come together, but as you are stretching that capability ever tighter, you are drawing out holes that are gaps. You can fill some of those with new systems, and some with alliance contributions, but the question is: from a policy level, do we understand the importance of maritime surveillance for maritime security as a whole, and are we prepared to underwrite the capabilities required to ensure that we have sufficient coverage for what we want to do?<sup>61</sup>

42. When we asked Nick Harvey MP, Minister for the Armed Forces, whether he was prepared to underwrite the capabilities required to ensure that there was sufficient coverage for what the UK wanted to do, he did not do so. He assured us, however, that the MoD took the entire maritime situation very seriously and recognised “the importance of maritime surveillance for maritime security as a whole”. He asserted that the national financial situation had caused difficulties for the SDSR and that with limited resources there would be an element of risk and that in respect of maritime surveillance the decision

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59 Defence Committee, Ninth Report of Session 2010–12, *Operations in Libya*, HC 950, para 114

60 Defence Committee, Eleventh Special Report of Session 2010–12, *Operations in Libya: Government Response to the Committee’s Ninth Report of Session 2010–12*, HC 1952, p 12

61 Q 16 [Dr Willett]

taken was “what we thought to be the least bad option [...] and that it was a tolerable level of risk to carry”.<sup>62</sup> However the Minister acknowledged:

in the wider sense [...] the Navy is going through a very difficult patch while older platforms are working their way out and until newer ones work their way in. I think that we recognised from the outset that the Navy would go through a lean period before the up-curve came back through. That is what we have seen, but so far, despite the tests presented, for example by Libya last year, it has managed, and we believe that the risk we are carrying is acceptable, if regrettable.<sup>63</sup>

43. Despite the end of the Libya operation concerns were still being raised about the effects on the standing maritime tasks of events such as the London Olympic Games. On 9 May 2012, *The Telegraph* reported that the “Royal Navy no longer had enough warships to dedicate one to fighting piracy off the coast of Somalia all year round”.<sup>64</sup> It added that the “difficulties had been compounded by the need to commit ships and personnel to the Olympic security effort”. We put these concerns to the Minister, who did not accept that the Royal Navy had in any way abandoned any of its tasks. He told us:

Although I acknowledge and do not shy away from the fact that the Navy’s assets are being heavily used at the moment and that we are taking a degree of risk, I do not think that I accept the proposition that you were putting to me that they have actually had to abandon any of their tasks altogether. They have just had to find other ways of completing them.<sup>65</sup>

44. Despite this denial, when we asked the Minister whether counter-piracy operations had been affected by the 2012 London Olympics he confirmed that:

during the course of this year the UK is not contributing any vessels to the various international counter-piracy missions. We continue, of course, to exercise command of the EU operation from Northwood, but I do not see why we would, in principle, at all times contribute vessels to those missions. We certainly expect to do so again as time progresses, in rotation with the other partner nations involved.<sup>66</sup>

45. Following our evidence session with the Minister, we requested further information from the MoD regarding the pressures on maritime surveillance assets due to other demands on the Royal Navy such as the Olympics. The MoD told us that maritime surveillance assets were currently undertaking standing commitments:

- Sea King helicopters in Afghanistan (Operation HERRICK);
- Merlin Mk 1 helicopters in Oman (Operation CHOBDAHAR);
- assets undertaking a range of the Military Tasks listed in the SDSR;

62 Q 132

63 Q 132

64 *The Telegraph*, 9 May 2012, available at: <http://www.telegraph.co.uk/news/uknews/defence/9253764/Navy-forced-to-drop-year-round-Somalia-piracy-patrols.html> (accessed 11 September 2012)

65 Q 133

66 Q 134

MT2, providing nuclear deterrence;

MT3, defending the UK and overseas territories; and

MT4, supporting civil emergency organisations in times of crisis.<sup>67</sup>

This was in addition to maintaining a requirement for contingency through the Ready Force Task group (RFTG), part of which is forward deployed to the Gulf under Operation KIPION. Operation OLYMPICS was an added responsibility which was being undertaken using assets in their regeneration (training and maintenance) periods, between either Gulf or Operation HERRICK tasks, prior to deployment on roles related to maritime surveillance, and this reduced the ability to utilise assets flexibly to mitigate capability gaps in other areas. There were also implications for the defence of the UK home base or any of its Permanent Joint Operating Bases overseas as it was necessary to “make greater use of surface platforms such as the River Class patrol vessels and frigates / destroyers for short notice tasking, often to deploy at range to locate and track any incursions”. In addition to all this, the Merlin helicopter force was being upgraded from Mk1 to Mk 2 which would see a dip in the number of craft available until the middle of 2013 when only 9 would be available of a force of 28.<sup>68</sup>

**46. We repeat the concerns expressed in our Report on Operations in Libya regarding the Royal Navy’s ability to continue to deliver the required high levels of standing maritime commitments with fewer platforms. It is likely that risk taking will occur more frequently as the outcomes of the SDSR are implemented and the smaller number of available assets is stretched more thinly. We note that the Minister asserted that the Royal Navy was not abandoning any of its tasks. However he also accepted that the Navy is undergoing a “lean period”, being heavily used and accepting a degree of risk. Maritime surveillance assets are an essential component of maritime security and these additional requirements such as Libya and the Olympics pose a potential risk to maritime security due to this overstretch and possible competing demands for those assets. This is illustrated by the UK not contributing any vessels this year to the international counter-piracy missions and the necessity to use assets and personnel between operations in the Gulf or Afghanistan for the London Olympics.**

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67 Ev 49

68 Ev 49

## 4 Future maritime surveillance and regeneration

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### Rapid regeneration of a maritime patrol aircraft capability

47. We explored how quickly the MoD and the Armed Forces could regenerate a maritime patrol aircraft capability in the event of a sudden risk escalation. Nick Harvey MP, the Minister for the Armed Forces, thought that it would “require the security assessment to deteriorate very quickly” for there to be a need to consider an urgent replacement.<sup>69</sup> He thought it much more likely that any deterioration in the security picture would be gradual. The next opportunity for the Government to make a fundamental assessment of this would be presented by the 2015 Strategic Defence and Security Review (SDSR). The MoD confirmed that there were currently no plans to regenerate specific capabilities although “as with any military capability, if current assumptions about the strategic environment and threats change significantly then consideration will be given to enhancement options”.<sup>70</sup> When we asked the Minister if the MoD were currently looking at the possible rapid regeneration of a MPA, he told us “we are not looking at that issue now because we do not perceive any urgent need to do so”.<sup>71</sup>

48. However, even accepting that a decision is unlikely to be required before the next SDSR, we were concerned about the lack of work being undertaken on ways rapidly to regenerate this capability, and by the Minister’s willingness to postpone a decision until 2015. An essential part of any regeneration of a MPA capability would be the ability of suppliers to deliver and support it, but the MoD has not discussed the regeneration of specific maritime surveillance capabilities with industry.<sup>72</sup> Despite this the Minister and Air Vice-Marshal Mark Green, Director and Joint Air Capability and Transformation, MoD, were confident that rapid regeneration of a MPA platform less complex than the Nimrod was achievable at a short notice. The Minister told us:

If, at relatively short notice, we thought that we needed to get back into having a dedicated capability we could put something together or buy something off the shelf pretty quickly. Would it be of comparable complexity to Nimrod? No. Would it be capable of performing a maritime surveillance function because we perceived the need to get back into that urgently? I think it would.<sup>73</sup>

Air Vice-Marshal Green added that the ability to regenerate a MPA capability would be dependent on the risk identified and the complexity of the platform required. Something less complex than the Nimrod MRA4 could be acquired “relatively easily because they are, effectively, on-the-shelf purchasing”.<sup>74</sup> Another alternative was leasing options, which the

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69 Q 205

70 Ev 44

71 Q 207

72 Ev 45

73 Q 215

74 Q 206

MoD had adopted with C-17s.<sup>75</sup> We pressed the Minister on whether, if it were to be decided in 2015 that this capability was urgently required, how rapidly the capability could be procured and put in place and whether it would be expensive.<sup>76</sup> He responded:

there are options out there that other countries use. We have shown in the urgent operational requirement process which purchased equipment for Afghanistan that when it needs to, procurement can work very quickly. It might not be the optimal solution for the long term, but in your scenario of an urgent requirement I think we would be capable of getting something going again—I hesitate to be drawn.<sup>77</sup>

[...]

Some of the urgent operational requirement [UOR] purchases for Afghanistan have compared rather favourably with some of the MoD's other procurements. While I would not necessarily claim that they would be cheap, the experience of UORs is that they are quite good value for money.<sup>78</sup>

**49. We note that the MoD asserted it has robust risk assessment and management procedures in place to spot any risk escalation in the maritime surveillance area. However, in practice the robustness of these procedures cannot be proven until such risks materialise and are identified and dealt with or are missed with potentially disastrous consequences. We are also less sanguine than the Minister that if an urgent need to regenerate the maritime surveillance capability arose this could be achieved quickly. We accept that regenerating the complex capabilities of the Nimrod MRA4 would be more difficult and take longer than purchasing a platform off the shelf or putting something together that could perform an urgent maritime surveillance function. However, as the MoD has admitted in evidence that it is not currently considering the rapid regeneration of any maritime patrol aircraft platform and that it is not in discussion with industry about the regeneration of specific maritime surveillance capabilities, and given the complexities and testing required of maritime patrol aircraft platforms, we require further evidence that a sufficient level of capability could be regenerated as quickly as the Minister suggests.**

### Tolerable risk or gamble?

50. While the MoD acknowledged that there is a maritime surveillance capability gap, it regarded it as a tolerable risk. However other witnesses considered it a gamble.<sup>79</sup> Rear Admiral Tony Rix (retd.), former Chief of Staff to the NATO Maritime Headquarters in Naples, told us:

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75 Q 206

76 Central to the regeneration of this capability will be the maintenance and availability of skilled personnel. The MoD has programmes, such as the Seedcorn initiative, in place for this purpose (see paras 80–83 below).

77 Q 206

78 Q 216

79 For example see Ev w 16 [Air Vice-Marshal Roberts] and Ev w24 [Scottish National Party].

My personal assessment is that it is [a] gamble. It is a risk that we should not be taking for a number of reasons. First, we do not have the surveillance coverage that we used to have. Indeed, trying to regenerate that surveillance capability—the broad surveillance, particularly the wider-area persistent surveillance capability—at short notice would be very difficult. There are some initiatives within the MoD to do that, but for reasons that we have gone into so far, surveillance—wider-area persistent surveillance—is an essential part, from my perspective, of the military world, enabling military operations. It is a gap that we should not tolerate.<sup>80</sup>

Senior UK Armed Forces personnel disagreed with Rear-Admiral Rix. Air Vice-Marshal Green said “I think that the situation that we have today is a tolerable risk”.<sup>81</sup> Rear Admiral Ian Corder, Commander Operations Maritime, MoD, added “as the person who wears that risk most of the time, I would firmly say that it is within the bounds of tolerable risk at the moment”.<sup>82</sup>

51. General Sir David Richards, Chief of the Defence Staff, thought that the risk created by the Nimrod decision was not in the gamble category and warned that it should not be allowed to become so. He told us, in November 2010, “we must work very hard to ensure that that is the case, but it is another risk that we now have to manage. [...] The professional military now need to work actively with allies to see how we mitigate that risk”.<sup>83</sup> Nick Harvey MP, Minister for the Armed Forces, thought that the capability gap was a continued acknowledged risk. However he asserted that Ministers and policy makers in the MoD were kept aware of the levels of risk through established risk management processes which also covered the “longer-term strategic risk”.<sup>84</sup> Tom McKane thought that “risk management [was] something that imbues almost everything that the Department does, and so in relation to specific operations or specific activities, there will be an examination of the risks associated with that and a plan put in place to manage that, but clearly they are not risks that one would go into in public”.<sup>85</sup>

52. It is essential that the MoD’s risk management procedures are robust enough to identify and deal with potential future capability gaps. For example the Sea King (SKASaC) helicopter which has the primary roles of wide area surveillance and battlespace management across land, air and maritime domains is due to be retired from service in 2016 and replaced by Project CROWSNEST hosted by the Merlin Mk 2 aircraft.<sup>86</sup> These procedures should also consider the opportunities to adapt existing assets to provide a

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80 Q 9

81 Q 46

82 Q 46

83 Defence Committee, Oral and Written Evidence, *The appointment of the new Chief of the Defence Staff*, HC 600–i, Session 2010–12, Q 38

84 Qq 135–140

85 Q 139

86 The MoD provided the following description of Project CROWSNEST: Project CROWSNEST will satisfy the requirement for an assured Airborne Surveillance and Control (ASaC) capability to provide long range surveillance and battlespace management to Carrier Strike and Littoral Manoeuvre task groups. Project CROWSNEST is to replace SKASaC. The mission system solution will be hosted on the existing Merlin Mk2 aircraft, affording that platform a true multi-role capability across the air, maritime, land, surface and sub-surface environments. This will exploit the flexibility inherent in having a bolt-on sensor package that could allow either Anti-Submarine Warfare or ASaC role to be discharged dependent on the Commander’s requirements (although to note the two roles may be mutually exclusive for concurrent or simultaneous operations).

maritime surveillance capability although this is not their current role. For example the Sentinel aircraft is due to be retired from service in 2015 subject to Operation HERRICK conditions but witnesses including the MoD have identified its potential to be adapted to a maritime surveillance role.<sup>87</sup>

**53. The provision of maritime surveillance should be considered as a whole taking into account the different, competing requirements and the risks associated with gaps and non-provision in the capability. Capability and platform decisions must be coherent and informed. We are aware that the capability gaps that exist in maritime surveillance are not limited to a maritime patrol aircraft, and include, for example, the withdrawal of Sentinel and the loss of the four Broadsword-class Type 22 Frigates' information and intelligence gathering capabilities and towed array sonar. We also note that there is the potential for other capability gaps to occur, such as when the Sea King (SKASaC) helicopter is withdrawn in 2016 to be replaced by Project CROWSNEST operating from the Merlin Mk 2. In response to our Report, the MoD should set out how it intends to deal with the increased risk caused by these emerging capability gaps.**

**54. We remain concerned about the MoD's capacity to manage the risk created by the capability gap in maritime surveillance and about its ability to react to demand in the short and medium term.**

## Future maritime surveillance requirements

### *MoD capability investigations*

55. We have already discussed the possibilities for filling the immediate maritime surveillance gap. In January 2011, the Ministry of Defence began a capability investigation into its *long term* requirements for a Wide Area Maritime Underwater Search (WAMUS) capability. This was completed in October 2011, but the MoD has not made its findings public.<sup>88</sup> During 2011, the MoD also undertook similar studies into other areas relevant to maritime surveillance.<sup>89</sup> All of these studies would be expected to contribute to the debate on the future provision of maritime surveillance. Air Vice-Marshal Green described the WAMUS study to us:

The issue was related to: noting the decision to withdraw the Nimrod out of service, and if the MoD decided that there was indeed a requirement to fill that capability gap in the future, what sort of platforms would be required in order to satisfy it? There are lots of ifs and buts in there, but it presumed that there was going to be a requirement that was yet to be decided. If you assume that there was, what could you use? Could you use unmanned aerial platforms; could you use manned platforms? Could you use hybrid air vehicles and so on? We have already provided details of the conclusion to that. What that work has done is provide us with a level of underpinning research already, which we will then wrap into our capability

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87 Ev 39 and Ev w30-31

88 HC Deb, 22 March 2011, cols 946-7W and HC Deb, 1 February 2012, cols 653-4

89 Ev 49

investigations as we go forward to the Strategic Defence Review 2015. It was a fundamental piece of analysis to support our future direction.<sup>90</sup>

56. We were concerned that the WAMUS study had not been undertaken as part of the work on the 2010 SDSR. Air Vice-Marshal Green responded :

We were faced in the SDSR with trying to cut our cloth according to our means, and there is no doubt that we had to make some very difficult decisions. An analysis of all the options available to us was done, and at that stage, the analysis was that deleting the MPA aircraft was the least worst option. Analysis was completed that looked at the capability gaps that we would create by deleting that capability. Afterwards, the study allowed us to look at what options there would be in future and whether we needed to fill the capability that we had just deleted, the timeline and the likely platforms. It was primarily financially driven, against a context of the current threat that we faced at the time in the SDSR and our funding priorities. It was a difficult decision that was the least worst at the time.<sup>91</sup>

57. Air Vice-Marshal Green told us that the WAMUS study had caused the MoD to conclude that in the medium term an aircraft was likely to be the solution should it be necessary to fill the gap when Nimrod MRA4 was cancelled. In the longer term, about 20 years, technology was likely to provide the opportunity for the use of unmanned systems, especially underwater.<sup>92</sup> The Air Vice-Marshal confirmed to us that the WAMUS study would not have been required if the Nimrod MRA4 had been retained.<sup>93</sup>

**58. While we commend the MoD for undertaking studies that will help inform future decisions on the provision of maritime surveillance, we believe it would have been beneficial if these studies had been undertaken before or as part of the SDSR especially given that the MoD has admitted that the Nimrod MRA4 decision was primarily financially driven and in the short to medium term a maritime patrol aircraft would be the solution for maritime surveillance requirements.**

59. Although these studies were taking place at the same time as our inquiry into the Strategic Defence and Security Review (SDSR) and the National Security Strategy (NSS), the MoD did not tell us about the studies in its oral and written evidence or in the Government's response to our Report. We asked Nick Harvey MP, Minister for the Armed Forces, and MoD officials why we had not been informed of the WAMUS study. He replied:

But you were inquiring into the SDSR. With respect, this piece of work was not anything to do with the SDSR. It was considering the future and the sort of capabilities that we might develop in the future. It was not about the SDSR.<sup>94</sup>

[...]

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90 Q 119

91 Q 47

92 Qq 41–43

93 Q128

94 Q 123

With respect, everything that the Ministry has been doing after the SDSR process was complete is looking to the future—Future Force 2020, the sort of strategic decisions that we will have to make in 2015 at the next SDSR, and at micro-scale the annual budget cycles. I am not clear how it would have assisted your study of the SDSR during the spring of 2011 to have described every piece of work that we were doing looking to the future capabilities that we hoped to generate. The scope of your inquiry would have been endless if we had viewed it in quite that way.<sup>95</sup>

60. We asked the Minister and MoD witnesses whether it would not have been helpful to mention the WAMUS study when addressing our concerns about the Nimrod MRA4 decision in the Government response to our report on the SDSR and NSS. Air Vice-Marshal Green replied “Yes, I think it probably would have been helpful if we had thought more broadly about that particular topic”.<sup>96</sup> In written evidence, following our evidence session the MoD told us:

Following Mrs Moon’s Parliamentary Question which was answered by Minister(DEST) on 22 March 2011, Nimrod was discussed three times by MoD and Government witnesses in the course of the open session examination of witnesses in the House of Commons Defence Committee Inquiry into The Strategic Defence and Spending Review and National Security Strategy. In each of the three cases, the focus of the discussion was the impact of the loss of Nimrod and ways that the Department has sought to mitigate the resulting capability gap. In the Department’s view, discussion of WAMUS Capability Investigation, with its aim ‘to establish the nature and size of any ‘wide area’ ASW capability risk, over time, and to identify and test options for mitigating demonstrable risk’ would not have furthered the discussion as the Committee was focused on what the Department was currently doing to mitigate the gap, rather than the long-term implications or requirements. As the answer of 22 March indicates, there was no intention on the Department’s part to conceal this study, though its classification, and the fact that it was still ongoing, would have made it hard for us to provide details at that time. As the results of the WAMUS CI were not published until 31 October 2011, so all that MoD and Government witnesses could have done was reiterate Minister(DEST)’s answer to Mrs Moon’s Parliamentary Question.<sup>97</sup>

**61. Given that the MoD described the Nimrod MRA4 decision as the most difficult in the SDSR, it is unacceptable that the MoD did not think it appropriate to inform us that it was undertaking long term capability investigations into areas directly related to the UK’s maritime surveillance capabilities whilst we were undertaking our inquiry into the National Security Strategy and the Strategic Defence and Security Review. Our concerns were not limited to what the MoD was currently doing to mitigate the capability gap as we asked the Government to outline its plans for the regeneration of this capability. These studies would have been relevant to that. Indeed, the MoD told us in evidence that when responding to the concerns on Nimrod in our SDSR and NSS**

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95 Q 125

96 Q 130

97 Ev 53

Report it would have been helpful if it had thought more broadly about that particular topic. Parliamentary scrutiny is not an optional extra. We are concerned that had parliamentary questions not revealed the existence of the Wide Area Maritime Underwater Search (WAMUS) study we could have remained in ignorance of it. We expect the MoD to be more proactive and forthcoming in its provision of information to us.

### *The next SDSR*

62. Looking ahead to the next SDSR, expected in 2015, Rt Hon Philip Hammond MP, Secretary of State for Defence, told us “we will have a big decision to make about the capability gap that we have accepted on maritime patrol aircraft”.<sup>98</sup> In its written evidence the MoD identified the maritime surveillance challenges it expected to face in the next SDSR as including:

- the identification and assessment of future risk across the Department’s primary and secondary roles;<sup>99</sup>
- planning for an ever increasing need for timely surveillance and targeted information through technological advancement; and
- in consultation with the UK Civil Authorities, provision for the increased responsibility of the forthcoming Exclusive Economic Zone.<sup>100</sup>

63. Nick Harvey MP, Minister for the Armed Forces, told us there would be a maritime work stream for the next SDSR, but was uncertain whether there would be one specifically about surveillance. Air Vice-Marshal Green added:

There certainly will be a work strand that relates to our future ISTAR capabilities. That will be led through my post, which, at that point, will be lodged within the Joint Forces Command. We have already discussed ownership of the issue, as part of our broader transformation, and where that issue will sit. The commander of the joint forces will be the defence authority for information. It fits within his portfolio extremely well. He looks across all environments—land, air and maritime—and it is part of that debate. The work that we have done since the SDSR, with the WAMUS study and with seedcorn, allows us to provide the right intellectual horsepower for that debate to ensure it is kept live as a component within the overall ISTAR capabilities.<sup>101</sup>

**64. We note the 2010 SDSR’s acknowledgement of the importance of military capabilities such as Intelligence, Surveillance, Targeting, Acquisition and**

98 Uncorrected transcript of oral evidence taken before the Defence Committee on 12 July 2012 HC (2012–13) 525-i, Q11

99 The MoD told us that these are the seven Military Tasks in the SDSR.

100 Ev 42; The proposed Exclusive Economic Zone covers the extent of the UK Marine Area. The MoD advised that “It is worth noting that the United Nations Convention on the Law of the Sea (UNCLOS) prescribe EEZ and settle disputes between nations. The UK EEZ is awaiting confirmation following negotiations with other nations such as France and Denmark”.

101 Q214

**Reconnaissance (ISTAR) and that UK maritime capabilities will include ISTAR based on network-enabled warships, submarines and aircraft. The capability studies already undertaken by the MoD are a good starting point and we welcome the commitment to an ISTAR work stream for the next SDSR. However, given the Secretary of State for Defence's statement that there will be a decision to be made in the next SDSR about the capability gap on maritime patrol aircraft, we recommend that work on the next SDSR should include a specific maritime surveillance work stream, involving all those, military and non-military, who make use of these assets.**

### **Funding**

65. On 14 May 2012, the Secretary of State made a statement to the House of Commons on the Defence Budget and Transformation in which he asserted that he had balanced the MoD budget. He provided information on the value of the core programme, investment decisions and an unallocated contingency. He told the House:

Balancing the budget allows me to include within that £152 billion core programme a £4 billion-plus investment in intelligence, surveillance, communications and reconnaissance assets across the Cipher, Solomon, Crowsnest, Defence Core Network Services and Falcon projects; the outright purchase of three offshore patrol vessels that are currently leased; capability enhancements to the Typhoon; and a range of simulators, basing and support equipment for the new helicopters and aircraft that we are introducing.

That programme represents the collective priorities of the armed forces, set out by the armed forces committee on which all the service chiefs sit. They confirm that the committed core equipment programme, together with the £8 billion of available unallocated headroom, will fund the capabilities that they require to deliver Future Force 2020 as set out in the strategic defence and security review. That £8 billion will be allocated to projects not yet in the committed core programme only at the point when they need to be committed in order to be delivered on time, and only in accordance with the military assessment of priority at the time.<sup>102</sup>

66. During questioning on his statement the Secretary of State for Defence confirmed that there was no money for maritime surveillance from conventional aircraft in the equipment programme:

Maritime surveillance from conventional aircraft is not currently funded in the programme. That is one of the capability gaps that my predecessor chose to accept, and a risk that we have chosen to manage. A number of different technologies will be available to deal with it as we approach the end of the decade. That is one of the decisions that the armed forces committee will have to make when it considers the prioritisation for the head room in the planned equipment budget.<sup>103</sup>

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102 HC Deb, 14 May 2012, col 264

103 HC Deb, 14 May 2012, col 271

67. We pursued the implications of the Secretary of State's statement on funding for future maritime surveillance and ISTAR in general. We asked our witnesses whether commitments in Afghanistan had led to surveillance capabilities being too land-focused and whether this was reflected in the allocation of funding for surveillance capabilities. Air Vice-Marshal Green responded that:

it must be remembered that the investment in ISTAR for Afghanistan has been through NACMO [Net Additional Cost of Military Operations], so it is additional money—

[...]

If you took away the urgent operational requirements out of Afghanistan, there has been no additional investment from the MoD into providing the information required to conduct operations. Indeed, we have actually found strengths in some of our platforms that we probably did not know were there. The Sea King has been a great asset in pursuing insurgent operations in Afghanistan [...]. So Afghanistan has provided us with a focus, but it has not actually skewed the balance of investment.<sup>104</sup>

68. As investment in ISTAR for Afghanistan has been funded by the Treasury through NACMO, this would cease when combat operations in Afghanistan ended at the end of 2014. We were concerned about the impact on funding for ISTAR and the provision of these capabilities. Air Vice-Marshal Green confirmed that, unless there was another conflict, the MoD was assuming that the investment would be withdrawn and were considering which ISTAR platforms to bring into the MoD's core equipment programme. He told us:

At the moment, what we are doing is looking at those specific platforms that provide us with ISTAR capability in Afghanistan and deciding whether it is wise for us to bring them into the core equipment programme. Clearly, there has been investment in them to date, and some of them have enduring capabilities. We will need to see where they fit into the overall priority mix for defence as we move forward. They are decisions that we do not need to make today; they are decisions for us in the future.<sup>105</sup>

69. We were concerned that this would mean that the funding would be taken from elsewhere in the core equipment programme or that the MoD was already using the unallocated contingency funding announced in the Secretary of State's statement. Air Vice-Marshal Green responded:

The Secretary of State has announced a core programme, which is fully funded. We talk about the urgent operational requirements and whether we bring them into core. They are all for consideration in the unallocated provision that the Secretary of State spoke about in his previous announcement. As we move forward, we must prioritise those equipments that are not part of the core programme, and the debate for us is in deciding where they fit on that priority list and which ones we are going to fund.

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104 Q 41

105 Q 152

Clearly, that will be done against risk that we are carrying in current ops, and our contingent ops.<sup>106</sup>

70. We explored the criteria for spending the unallocated £8 billion included in the Secretary of State's announcement. The MoD told us that its intention was to look at areas waiting to be incorporated into the core programme and the available resources and to use a single prioritisation methodology. Funding would be assigned quarterly. The first decision point for investment decisions expected in July 2012, but would only include areas where a decision was required to be made. If there was no requirement to make a decision or more information was required the matter would be reconsidered three months later. Money would only be committed when it was necessary and in accordance with military advice and if it could be demonstrated "it could be afforded—both the capital purchase and the support—over the 10 years of the programme".<sup>107</sup>

71. We were keen to establish what the military advice was in relation to ISTAR. Air Vice-Marshal Green told us "there is a planning assumption at the moment that we will allocate some of that unallocated provision, which is sufficiently high up the priority order as we sit here today, to ISTAR capability".<sup>108</sup> However the MoD were unable to tell us which of the ISTAR capabilities in Afghanistan it would ideally wish to bring into the core programme and how much this would cost. It added that "it is too early to define the cost of the capabilities as this is an ongoing activity as part of Annual Budget Cycle 13".<sup>109</sup>

**72. We are encouraged by the rigour expected to be applied to the spending of the £8 billion unallocated reserve that was announced by the Secretary of State on 14 May 2012. However, we are disappointed by the MoD's assertion that there is no requirement to buy maritime patrol aircraft (MPA) at present and that it is not currently funded in the programme. We are concerned that the MoD has not decided whether to fill the capability gap especially as the Chief of the Defence Staff has stated it was a capability that MoD wanted to have and it is still its view that a MPA is the solution for the next 20 years.**

**73. We are worried about how ISTAR capabilities will be funded after the withdrawal from Afghanistan, in particular ISTAR provided under Urgent Operational Requirements, and how this will be incorporated into the core programme. We recommend that the MoD consider this matter urgently and, in response to our Report, provide details of the investment decisions on the unallocated £8 billion announced by the Secretary of State for Defence that were due to be made in July.**

## Possible options for future maritime surveillance

74. It is important to examine the options offered by the advance of technology, such as unmanned systems, for providing a comprehensive range of maritime surveillance

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106 Q 154

107 Q 156

108 Q 157

109 Ev 50

capabilities in the future. The MoD's view is that in the longer term technology would offer other solutions to the provision of maritime surveillance.<sup>110</sup>

75. In her written evidence, Dr Sue Robertson, a former MoD consultant in this area, considered possible ways of providing a UK maritime patrol capability:

- Continued use of Merlin Helicopters and Type 23 Frigates
- Procurement of a new fleet of large manned [maritime patrol] aircraft, such as P-8 or CN-235
- Purchase of second-hand P-3 [aircraft] and upgrading them to an acceptable standard
- Procurement of smaller dedicated MPA aircraft that have been derived from commercial airframes such as DASH-8 or Gulfstream
- Use of [unmanned aerial vehicles] UAVs, such as Heron or Global Hawk
- The installation of sensors on other aircraft such as A400 and A330 so that maritime reconnaissance can be carried out as a secondary role
- Use of lighter-than-air (LTA) vehicles
- Satellite Surveillance
- Use of alternative sources of information such as Automatic Identification System (AIS) data received from ships coupled with data from land-based electronic surveillance systems
- Collaborative programmes with allies to make use of their platforms in our territorial waters.<sup>111</sup>

76. Dr Robertson went on to give a comparative analysis of the ability of each of these to carry out tasks equivalent to those of a maritime patrol aircraft capable of wide area surveillance.<sup>112</sup>

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110 Q 41

111 Ev w32

112 Ev w32

Table 1

Task \ Asset	Merlin	New Long-range MPA	Upgraded P-3	New Short-range MPA	UAV	A400 /A330	LTA	Satellite
Submarine Detection	Yes	Yes	Yes	possibly	No	No	No	No
Shipping Surveillance	Limited Sensors	Yes	Yes	Limited Range	Limited Sensors	Yes	Yes	Yes
Fleet Protection	Yes	Yes	Yes	Yes	Yes	Yes	No	No
ISTAR	No	Yes	Yes	No	Yes	Yes	Yes	Yes
ELINT data gathering	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Counter-terrorism / Border Protection	No	Yes	Yes	Yes	No	Yes?	No	No
Weapons deployment	Yes	Yes	Yes	No	No	Yes?	No	No
Search & Rescue	Limited Range	Yes	Yes	Limited Range	No	Search only	No	No
Emergency Comms	No	Yes	Yes	No	Possible	Yes	No	No
Overseas Maritime Patrol	No	Yes	Yes	No	No	No	No	No
Counter-pirate operations	No	Yes	Yes	No	No	No	No	No
Protection of Trident Submarines	Limited Range	Yes	Yes	Limited Range	Yes	No	No	No

77. We asked Air Vice-Marshal Green whether purchasing alternative maritime patrol aircraft such as P8s, CN-235s or second hand P-3s and upgrading them to the required standard was being considered:

They are not actively being considered, because we have not decided whether we have a requirement. There is no requirement to buy an MPA at the moment. There is not a genesis option. All the work that has been done to date has said that if the MoD decides to fill the gap, it would need to buy an aircraft. The question of whether the MoD actually wants to fill that gap has not been answered, and we see that as being part of the SDSR 2015 time frame decision. The challenge for my staff and my colleagues at the table is to make sure that we have the information available as we run into the 2015 SDSR, so that we can have a structured debate about whether we want to fill the gap and what the options are out there in the near term to fill it. We can then have a balance-of-investment decision about where the MoD decides to go post-2015.<sup>113</sup>

78. We asked the Minister whether it was important, and if so how much so, for maritime surveillance assets to also have an attack prosecution capability, he told us:

I do not think that it is essential that the attack capability has to come from exactly the same platforms. It wouldn't be a bad idea, because it would make things faster, but I don't think it's an absolutely essential prerequisite that it must.<sup>114</sup>

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113 Q 64

114 Q 177

**79. We note that the Minister does not think it is an essential prerequisite for maritime surveillance and the attack prosecution capability to be delivered by the same asset. In response to our Report the MoD should set out the supporting evidence and likely costs of this split assets approach.**

### **Seedcorn initiative**

80. As part of our inquiry we looked at the measures the MoD had in place to ensure UK Armed Forces personnel maintained the necessary skills to provide maritime surveillance capabilities. The MoD described to us the individual and collective training that was undertaken. In an attempt to maintain the ability to sustain the capability to operate high level fixed-winged maritime patrol aircraft and the skills of personnel, the MoD has also implemented the Seedcorn initiative, sending RAF personnel to train with allied Air Forces to maintain and develop their skills. Similar initiatives were in place for the Royal Navy.<sup>115</sup>

81. Nick Harvey MP, Minister for the Armed Forces, explained that the Seedcorn initiative was “currently planned out to 2019, but it doesn’t necessarily follow that it will end in 2019. That is just as far ahead as we have planned”.<sup>116</sup> We pressed the Minister on whether the initiative would be extended further than 2019. He responded:

I would say that the 2015 SDSR seems to me to be highly likely to come back to look at this issue. It is much too early to anticipate what decisions will be reached. I could imagine circumstances in which they might take certain decisions, but a further series of decisions would be needed in 2020. I would certainly think it is well within the realms of possibility that the Seedcorn initiative will be sustained through to a point where a 2020 SDSR takes decisions in this field.<sup>117</sup>

When we asked the Minister if it would be sustainable until then, he responded “Yes”.<sup>118</sup>

82. When we pressed our MoD witnesses on whether realistically the Seedcorn initiative would have to continue for a long period beyond 2020. Air Vice-Marshal Green responded:

It depends on the decisions made. At the moment, it is a funding assumption until that time and we think that it is very low risk maintaining it until that time. As we get to SDSR 2015, as the Minister said, and we shape our way forward, we will relook at that initiative on the back of what has happened with NATO’s smart initiatives and so on to see where we need to go. We have the ultimate flexibility in shaping that as we move forward.<sup>119</sup>

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115 Ev 44

116 Q 164

117 Q 165

118 Q 166

119 Q 173

The Minister added “that as well as the flying skills, what are being sustained are the analytical skills and the intellectual firepower to make use of the sort of information that these operations elicit”.<sup>120</sup>

**83. We support the principle of the MoD’s Seedcorn initiative as an attempt to maintain the ability to sustain both the capability to operate high level fixed-winged maritime patrol aircraft and the skills of its crews. This is an important initiative given the MoD’s statement that in the medium term another model of maritime patrol aircraft will be required to fill the capability gap left by the Nimrod MRA4. However, we doubt that the Seedcorn initiative is sustainable as far as 2019, let alone to 2030, given the continued uncertainty over the long term plans for a fixed-wing MPA. The MoD should explain what work it has done to identify the point at which this initiative will no longer be effective in sustaining the ability to regenerate the capability. We recommend that the MoD undertake a lessons learned exercise for sustaining the ability to regenerate other capabilities in the future.**

### Unmanned systems, lighter-than-air vehicles and satellites

84. The use of unmanned systems, lighter-than-air vehicles (LTA) and satellite technology systems has been proposed as alternative or complementary platforms to manned maritime patrol aircraft. In respect of its current use of unmanned aerial vehicles (UAV), space technology and other technology assets for maritime surveillance, the MoD told us that the UK has no unmanned aircraft system employed specifically for maritime surveillance. However it did use US satellite products and some commercial satellite services.<sup>121</sup> In respect of the future use of such assets for maritime surveillance the MoD added:

The Flexibly Deployable UAS Capability Concept Demonstration (CCD) aims to investigate the utility of an air vehicle with sufficient precision and persistence to provide a high quality ISTAR feed to deployed commanders where airfield support is not available or cannot be assured; the most demanding scenario envisaged being launch and recovery from an FF/DD sized vessel at sea.<sup>122</sup>

The MoD is also seeking to improve its unmanned maritime vehicle capability to assist in anti-submarine warfare, intelligence gathering and the provision of surveillance. DSTL is leading on the development of this programme.<sup>123</sup>

85. Northrop Grumman told us that UAVs played an important role in maritime surveillance and ISTAR in the US and Europe, offering an essential persistent capability for peacekeeping and peace enforcement missions. UAVs had transformed operations in

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120 Q 173

121 Ev 41

122 Ev 42

123 Further information is available at: [http://www.science.mod.uk/events/event\\_detail.aspx?eventid=176](http://www.science.mod.uk/events/event_detail.aspx?eventid=176) (accessed 11 September 2012)

Afghanistan and Iraq and future conflicts would see their roles expanded dramatically.<sup>124</sup> Northrop Grumman added:

In war-fighting situations, they offer near real-time target identification, engagement and assessment; timescales many times faster than for conventional platforms. While UAVs can fulfil their missions using a standalone approach, full exploitation of the operational benefits of UAVs is only possible in a joint integrated and network-enabled system. Within the US Armed Forces their use is already widespread, while, in the UK, the MoD has made ISTAR capability and UAVs a strategic priority.<sup>125</sup>

86. Northrop Grumman also thought that lighter-than-air (LTA) vehicles [balloons and airships] would “bring a revolutionary capability to persistent ISR [Intelligence, Surveillance and Reconnaissance] with the capability to be truly multi-mission with the inherent flexible, reconfigurable mission payloads”.<sup>126</sup> LTAs are able to stay airborne for extended periods and have very low fuel consumption. They can provide multi-intelligence capabilities and have lower total ownership costs than traditional ISR systems. Northrop Grumman added “in addition to its persistent ISR, the LTA system can provide overland persistent ISR and also effectively support the UK’s maritime operational needs with offshore surveillance or fleet support as an airborne communications node along with the traditional fleet mission needs”.<sup>127</sup>

87. However we also heard concerns about the use of UAVs for maritime surveillance. In his written evidence Dr Willett doubted the extent to which UAVs or commercial manned aircraft could provide the aerial capability for the UK’s maritime surveillance needs:

The use of commercial aircraft for such tasks is becoming increasingly popular as a procurement option, for example to meet Urgent Operational Requirements (UORs). A cheaper alternative to UAVs, these aircraft can be leased off-the-shelf. However, they do not have the persistence of a UAV. Future technologies may include blimps. One issue to address is whether future UK aerial maritime surveillance requirements can be met by one asset only, or whether a combination of assets will be required.<sup>128</sup>

In his written evidence, Air Vice-Marshal Alan Roberts (retd.) was also sceptical of UAVs as a standalone alternative to a maritime patrol aircraft because of technical and cost considerations.<sup>129</sup>

88. On the use of space and other technology, Squadron Leader Forbes (retd.), also had concerns:

There are a number of other space and airborne based intelligence systems which can give Indications and Warnings (IAW) of a threatening maritime environment.

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124 Ev w40

125 Ev w40

126 Ev w43

127 Ev w43

128 Ev 56

129 Ev w19

These should not be necessarily be ignored but they cannot carry the sensor capability to cover the range of skill sets needed to meet the disparate demands of ASW and ASuW.<sup>130</sup>

Rear Admiral Tony Rix (retd.), former Chief of Staff to the NATO Maritime Headquarters in Naples, was also cautious regarding the use of satellites: “the trouble with the satellite is that it cannot respond—it is less responsive than other surveillance assets—but it is all part of the mix”.<sup>131</sup> Dr Willett added:

“on satellites, it has obviously been the subject of much discussion that the UK does not have much capability of its own—the US and Europe have significantly greater capability—but we have, through Surrey Satellites, Novostar commercial satellite arrangement. As I understand it, that gives us limited time and access to that information, which limits capability, and also [...] it is very specific, but again, it reinforces the point about a wider layer.”<sup>132</sup>

89. Air Vice-Marshal Green saw unmanned vehicles as possible long term alternatives but said a maritime patrol aircraft would be the solution in the medium term:

I look at the rest of this decade and the 2020s, and 2030 and beyond. I can well see that unmanned systems could provide us with capability in the underwater space. The previous witnesses talked about hybrid air vehicles and indeed that is part of our broader information, surveillance, reconnaissance-type debate that we are having about the future, because we have a number of assets that provide surveillance. Clearly, this debate is about maritime surveillance, but we look at surveillance across the complete environment—across the land environment and across the maritime environment. And there are platforms that are not that far away that are unconventional, if you like, to our inventory, but that could help us with that debate. However, they will not provide us with the full cross-section of capability that an aircraft would provide in the next 15 to 20 years.<sup>133</sup>

**90. We welcome the Minister’s statement that the MoD intends to explore fully all options and alternatives for providing maritime surveillance. We agree that in the longer term unmanned systems such as unmanned aerial vehicles and lighter-than-air vehicles may well be a way forward, but also note the reported concerns regarding the limitations of using satellite technology. There are several obstacles to overcome and the MoD should keep us informed of progress on this.**

91. The 2010 SDSR and subsequent related decisions may affect the possibility of using UAVs from aircraft carriers. In the 2010 SDSR, the Government announced that one of the new Queen Elizabeth class carriers would be fitted with catapults and arrestor gear (‘cats and traps’) to enable it to operate the carrier variant of the Joint Strike Fighter.<sup>134</sup> On 10

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130 Ev w22

131 Q 32

132 Q 32

133 Q 43

134 HM Government, *Securing Britain in an Age of Uncertainty: Strategic Defence and Security Review*, Cm 7948, October 2010, p 23

May 2012, the Secretary of State for Defence told the House of Commons that the Government had decided not to proceed with this decision, instead reverting to the pre-SDSR decision to purchase the STOVL (short take off and vertical landing) variant of the Joint Strike Fighter.<sup>135</sup> This decision may affect the practicability of the use of UAVs.

92. Admiral Rix thought that in future UAVs might be flown from aircraft carriers in a maritime surveillance role. He was unsure about the timescale for delivering this capability but thought that unmanned aerial vehicles from aircraft carriers could provide a level of wide area surveillance and assistance at the operational and tactical level.<sup>136</sup> Dr Willett expressed concern that although there were a number of UAV programmes being considered, not many operated in a STOVL way which could have implications for the use of UAVs from aircraft carriers.<sup>137</sup>

93. We asked the Minister and MoD officials what the implications of the carrier decision were for the use of UAVs in a maritime surveillance role, particularly given the concerns we had heard about the limited number of UAVs that could operate in a STOVL way. The Minister told us that it should not be difficult to fly surveillance UAVs off aircraft carriers without cats and traps, but would be more difficult if the UAVs carried weapons.<sup>138</sup> Air Vice-Marshal Green added that a demonstration programme was being looked at which involved flying a UAV off the back of a frigate.<sup>139</sup> The Minister told us that while there was a good chance that the new aircraft carriers would have a maritime surveillance capability this would be unlikely to happen until the next decade.<sup>140</sup> Following our evidence session, the MoD told us in supplementary written evidence that there was virtually no difference in the surveillance capability of the Joint Combat Aircraft STOVL variant and the carrier version and they could be employed with similar mission responsibilities.<sup>141</sup>

**94. We note the MoD's confirmation that the requirements for unmanned aerial systems were taken into account prior to the decision to revert to a STOVL system on the new carriers and that the capability to undertake maritime surveillance using unmanned aerial vehicles (UAVs) launched from carriers would not be affected by this decision. We also note the concerns expressed to us on the limited number of UAVs that can operate in a STOVL manner and expect the MoD to keep this under review particularly if it becomes a requirement for future carrier launched UAVs undertaking maritime surveillance to have a weapons capability. We expect the MoD to keep us informed on progress of the possible use of carrier based UAVs for maritime surveillance.**

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135 HC Deb, 10 May 2012, cols 140–142

136 Q 31

137 Q 32

138 Q 178

139 Q 179

140 Q 183

141 Ev 50–51

## Cooperation with allies

95. We explored current and future collaboration with allies on maritime surveillance, particularly through NATO. The MoD emphasised that following the SDSR “strengthening our key defence alliances and partnerships has been critical in managing these changes” and also described current maritime surveillance initiatives under the 2010 UK-France Defence Cooperation Treaty, the NATO Naval Armaments Working Group and the European Defence Agency.<sup>142</sup> The MoD said that the withdrawal of Nimrod had increased to a limited extent the department’s reliance on other nations but there were “no formal, agreed criteria” for using allies’ maritime surveillance capabilities.<sup>143</sup> The MoD added:

for training, allies will bid into the planning of an exercise in order that surveillance capabilities from that nation can be considered and used. There are several international agreements that allow Allies to contribute directly to UK surveillance tasks in support of deterrent protection and intelligence gathering.

During the planning of an operation there are a number of factors that will be considered, including the capability itself; timeliness; and our ability to use the product of that capability. This interoperability and ability to use the surveillance capability of allies may be governed by MOUs.<sup>144</sup>

96. Allies had never refused the use of their assets, but they were not always available.<sup>145</sup> Admiral Rix thought it was not desirable to rely on allies, either because they might have other priorities or for security reasons.<sup>146</sup> However the Minister did not think maritime surveillance had to be a sovereign capability:

There is a great deal we can do in cooperation with our allies and partners. There is a great deal that we do do in the way of cooperation and information sharing, and there are various new initiatives being undertaken in NATO and in the EU that would assist international cooperation in this field in the future. I would certainly accept that there will be elements that we want to keep sovereign, but the proposition that the whole piece must, of necessity, be sovereign is not an analysis I would share.

[...]

We do a lot in cooperation with our allies already. This is a cooperative effort in which we work with several partners. To point to some obvious ones, the US, Canada and Norway are partners with whom we work all the time on this sort of piece. The idea that we—or, frankly, anybody—could afford to do this entirely on our own is one that I just do not think is realistic.<sup>147</sup>

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142 Ev 47

143 Ev 47

144 Ev 47

145 Ev 48

146 Q 19

147 Qq 141–142

However the Minister did confirm to us that no new arrangements or additional agreements had been established to cover the capability gap following the Nimrod MRA4 decision.<sup>148</sup>

### **NATO Smart Defence Initiatives**

97. We also explored the NATO Smart Defence Initiatives in respect of maritime surveillance. The MoD told us that there were two initiatives:

- A Tier One proposal: led by the Germans to pool and share MPA assets that could be offset or recompensed by the UK providing C130, C17 and tanker hours. The UK is not interested in this proposal because it does not have MPA assets to pool; the nations involved (Italy, Luxembourg, Poland, Portugal, Spain and Sweden) that are able to provide MPA will offer aging aircraft such as the P3 Orion that does not have the requisite level of avionics or reliability to support our Deterrent and would not offer value for money in exchange for the pooling of higher grade UK capabilities. Additionally there are concerns over sovereignty (related to the Deterrent in particular) and guaranteed assurance.
- A Tier Two proposal: The NATO Naval Armaments Group (NNAG) investigation, led by the Canadians, to provide a long term solution by means of MPA procurement; this would provide a NATO capability akin to the AWACS model. The UK supports this proposal because it overcomes the sovereignty and assurance issues whilst providing a multi-national procurement option based on economy of scale.<sup>149</sup>

98. When we asked our MoD witnesses what was the projected timescale for the Tier Two proposal, Tom McKane, Director General for Security Policy, MoD, told us it was a longer term project:

It is looking at a longer-term solution, so it is not something that would come to fruition in the next year or so; it would be a longer-term project. As to exactly when the study work will complete, I do not know.<sup>150</sup>

**99. We note the MoD's acceptance that since the SDSR the Department's reliance on allies to provide maritime surveillance has increased, though because of the range of capabilities and sources of information still available to the Department it had not done so markedly, and that the withdrawal of Nimrod had required greater reliance on other nations to provide MPA cover. We are concerned that the Government has not thought it necessary to try to secure any additional agreements to ensure the provision of maritime surveillance capabilities. Part of the MoD's examination of future maritime surveillance requirements should include an examination of those areas where a sovereign capability would be desirable and this should feed into the Department's consideration of a new MPA and the investigation of other options such**

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148 Qq 143–145

149 Ev 48

150 Q 168

**as UAVs. We support the UK's participation in the NATO Tier Two proposal for maritime surveillance and expect to be regularly updated on its progress.**

## 5 Cross-Government cooperation

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100. The UK's requirement for maritime surveillance goes far wider than the needs of UK Armed Forces. Other Government Departments and agencies also make use of the MoD's maritime surveillance capabilities and platforms in a number of areas and therefore we examined the cross-government cooperation between departments and agencies in determining the strategic requirements for maritime surveillance and their translation into operational requirements. We have discussed earlier defence-specific processes for establishing and setting the military requirements for maritime surveillance (see paragraphs 9–19). As a result of the 2009 update to the 2008 National Security Strategy, a Cabinet Office-led Maritime Security Review made two recommendations which would run in parallel to the defence-specific processes:

- Strengthened strategic oversight of Maritime Security through a set of strategic objectives and changes to the central oversight of strategic policy mechanisms.
- Improved Situational Awareness for Maritime Security through the establishment of a new national multi-agency National Maritime Information Centre (NMIC) at Northwood to address current vulnerabilities.<sup>151</sup>

### Maritime Security Oversight Group

101. In 2010, the Government sought to provide “strengthened strategic oversight” by establishing the Maritime Security and Oversight Group (MSOG) whose membership is made up of “key representatives of core departments, agencies and the Cabinet Office, and is the senior-level decision making group for maritime issues”. The MoD described the role of the group as providing “strategic oversight and direction of all cross-cutting maritime security issues and programmes, including aspects of maritime surveillance [and] is responsible for the Maritime Security vision, strategic objectives and risks, reviewing them as circumstances require, and allocating priorities in order to use a framework to drive and coordinate day-to-day policy on cross government programmes of work”.<sup>152</sup>

### National Maritime Information Centre

102. The 2010 SDSR acknowledged that no single department or body had the capacity or capability to deliver what is required to monitor the maritime environment and counter threats the UK faces both in territorial waters and internationally. The National Maritime Information Centre (NMIC) was established in Northwood on 1 April 2011 “to ensure information was disseminated, analysed and acted upon in a coordinated manner”. NMIC brings together government departments and agencies with responsibility for maritime safety, security and environment in one place and is accountable to the Home Office. Its intention is to develop a single picture of maritime activity similar to that used by air traffic controllers so that threats and risks can be recognised and countered as early as possible.<sup>153</sup>

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151 Ev 34–35

152 Ev 35

153 Ev 35

### ***MSOG and NMIC: achievement of their roles***

103. The creation of the MSOG and NMIC are intended to lead to a more strategic and coordinated approach on maritime issues. Although both organisations are relatively new we were interested to assess their progress in achieving the roles set out for them by the Government and whether there was scope for further improvements. Edward Ferguson, Head, Defence Strategies and Priorities, who is the MoD's representative on the MSOG, told us that there had been "considerable progress over the past couple of years" with the creation of the MSOG and NMIC. He added "there [had] been real progress at the operational level, and NMIC is the flagship programme. That greater interaction at the policy level is also really helpful".<sup>154</sup> Captain Russell Pegg, Head of NMIC, thought that the recognition that no one department or agency could fully understand what was occurring in the maritime domain and bringing together the "good work" going on within the "stovepipes" of departments had "brought immediate value to the bigger picture".<sup>155</sup>

104. Although NMIC was only established in April 2011, the MoD thought that it had already brought significant benefits by assisting greater coordination between UK Government agencies and departments and also international cooperation with allies. Provision had also been made for NMIC to report directly to the Cabinet Office Briefing Room (COBR) in the event of crisis.<sup>156</sup>

105. Our witnesses widely supported the establishment of NMIC and thought that it had been an important and successful development. Rear Admiral Tony Rix (retd.) described NMIC as "a fantastic organisation [which] will enable us to provide a single picture for maritime activity, with input from numerous agencies. The principle of it is superb".<sup>157</sup> Rod Johnson, the Chief Coastguard, commented "the principle is extremely sound in that what may in the normal pattern of life make perfect sense to my organisation will be of interest for a completely different reason to another".<sup>158</sup> Dr Willett was also supportive of NMIC but pointed out that political will and focus was required for its continued development:

The point is that when you have something such as NMIC, which is a new idea that is working very well, but which requires political support and resources, do you have the sustainable political focus on maritime issues to ensure that it and other activities like it are enabled to continue to develop?<sup>159</sup>

### ***Further improvements to cross-departmental working***

106. The establishment of the MSOG and NMIC is a useful first step to providing a more strategic and coordinated approach by Government to maritime issues. However we were keen to explore the scope for improvements in cross-government working and also to consider where the lines of demarcation should lie between departments. During our

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154 Q 78

155 Q 76

156 Ev 35

157 Q 33

158 Q 33

159 Q 33

inquiry we heard that there had been an intermittent debate over recent years about the need for the UK to have a National Maritime Security Strategy.<sup>160</sup> In November 2011, the MSOG instructed that work should commence on a cross-government National Strategy for Maritime Security. The MoD said that this strategy would:

set coherent, resource aware, and pragmatic objectives and actions, with maritime surveillance a key tenet. From a maritime surveillance perspective, the strategy aims to achieve greater coordination of homeland aerial maritime surveillance requirements; and fully utilise NMIC to co-ordinate an integrated maritime surveillance and interdiction capability through well-defined coordinated protocols between the key stakeholders in response to threats”.<sup>161</sup>

In oral evidence, Edward Ferguson, MoD, said that this would be difficult because of the number of agencies involved, but added that there were well-worked out procedures for coordination and deconfliction between them.<sup>162</sup>

107. When considering the lines of demarcation between departmental responsibilities we heard that although there are some tasks that are clearly defined as civil and others that are clearly military, there were some that were a mixture of the two. For example military maritime assets which are operating out at sea on a daily basis can provide a degree of surveillance that is non-military although this is not their primary focus.<sup>163</sup> Admiral Rix (retd.) supported examining the sharing of capabilities but warned against practical difficulties:

I think the sharing of capabilities is clearly a way ahead that needs to be looked at, but there will be all sorts of problems in sorting out priorities. One day, we might want surveillance of the fisheries and at the same time the Ministry of Defence might want surveillance of the Mediterranean. It is a very sensible way ahead, but I suggest that one should not underestimate the practical difficulties of achieving something that is effective for all the stakeholders.<sup>164</sup>

108. The Government agreed that more could be done to develop cross-departmental working and that there were other areas where cooperation should be explored. Edward Ferguson gave the example of aerial surveillance where “there are currently three departmental agencies—the UK Border Agency, the Marine Management Organisation and the Maritime and Coastguard Agency—that have individual aerial surveillance contracts to do different functions”. The Government was interested in looking at whether these could be brought together into a single contract, which would be a more efficient use of taxpayer money and should provide a more coherent product. However Mr Ferguson also pointed out that in a more coordinated approach the appropriate governance and oversight arrangements to manage those more coherent and single contracts would be critical.<sup>165</sup> Rear Admiral James Rapp (retd.), was supportive of possible moves towards a

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160 Q 7 and Ev 56

161 Ev 35

162 Q 78

163 Q 34 [Dr Willett]

164 Q 34 [Rear Admiral Rix]

165 Q 78

single air surveillance contract and suggested the Australian ‘Coastwatch’ Organisation as a potential model for the UK to follow as many of the characteristics of the UK situation were similar to those experienced by Australia before it adopted this model.<sup>166</sup>

109. Rod Johnson, the Chief Coastguard, said that although the Maritime and Coastguard Agency had no direct experience of the Australian model he thought it an example that could be considered and lessons learned from it.<sup>167</sup> Admiral Rix warned that the Australian model only covered the Exclusive Economic Zone and that the military requirements for surveillance are much more extensive, as were search and rescue requirements.<sup>168</sup> We understand that although the Maritime Security Oversight Group has agreed in principle to move forward on work towards a single air surveillance contract there was first a need to undertake further work, in particular to consider how governance and oversight of a single contract could be undertaken.<sup>169</sup>

110. It is important that cross-departmental cooperation should exist at ministerial as well as at official and operations level. Nick Harvey MP, Minister for the Armed Forces, told us there was a “sort of informal network of Ministers under James Brokenshire [Home Office Parliamentary Under Secretary for crime and security] that look at these things as well. He has the lead responsibility for that, but as this work goes forward and the officials begin to distil options and explore the scope for cooperation, Ministers will come together to look at the work they are producing”.<sup>170</sup> He thought that such an informal forum was the right one for taking forward the debate on maritime surveillance issues and settling issues of differing requirements, though ultimately decisions would be taken by the Cabinet or the National Security Council.<sup>171</sup>

111. Asked how much other Government Departments influenced the MoD’s thinking or drove its posture on maritime surveillance, the Minister responded that although other departments had active interests and there was scope for better coordination, he could not really see circumstances:

in which the requirements of those other Government Departments would lever the MoD against its judgment as to the military requirement into providing a service that it did not otherwise think that it needed to provide. However, if the MoD was moving to a position where it was looking at expanding what it does in this area and if the opportunity to cooperate with other Government Departments to avoid duplication, to multitask and to get better value for taxpayers’ money was to present itself, I could imagine it happening.<sup>172</sup>

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166 Ev w1–2

167 Q 35

168 Q 35

169 Q 78, Q 192 and Ev 46

170 Q 195

171 Q 195

172 Q 194

### **Future role of NMIC**

112. NMIC is currently an information-gathering organisation. During our inquiry it was suggested that given its closeness to the maritime information, it might be appropriate for it to evolve into a decision making body rather than for that decision making to be detached.<sup>173</sup> The Chief Coastguard, was cautious about this proposal, thinking that, although NMIC worked very well as a means of sharing information, if it were to become a decision making body as it would be “reorganising the way that the Government currently do their security and safety operations for all things maritime”.<sup>174</sup> He said that each agency was interested in different things and alerted by different developments:

The participating agencies and stakeholders already have mature and well rehearsed practices for dealing with their particular issues and the value-add is, as I have said, recognising that what might be perfectly normal or appear perfectly normal within the pattern of life for one agency may be a trigger for something else. However, turning that into a decision-making cell would require the reorganisation of Government in relation to maritime. That needs to be carefully thought through.<sup>175</sup>

113. While acknowledging these concerns, Captain Russell Pegg, Head of NMIC, did not dismiss the possibility of such a development. He told us:

We should not change if it is the right thing to do, and we should certainly look at that as a next piece of work [...] The value we have seen added is just through conversation of having all those people together—those eureka moments have happened. The intellectual argument is over; it is really now, “What is the national appetite to go to the next step if that is what the nation requires to safeguard its maritime interests?”<sup>176</sup>

114. The Minister was sceptical about such a big change:

If [NMIC] were to move [...] into a sort of command and control function for the whole of Government, that would be almost unique in terms of the way Government operates. I am not sure I am convinced by that. Individual Departments retain responsibility and individual agencies do form different parts of the work. It is entirely right that we try and get as common an understanding as we possibly can of the threats and the challenges, but [...] the need for the constituent Departments and agencies to retain their responsibilities would be likely to override pooling of the decision making.<sup>177</sup>

**115. We commend the Government for the establishment of the Maritime Security Oversight Group (MSOG) and the National Maritime Information Centre (NMIC) which have improved cross government cooperation on maritime surveillance issues. The MSOG’s work on the development of a National Strategy for Maritime Security is**

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173 Q 33 [Dr Willett]

174 Q 173

175 Q 34

176 Q 77

177 Q 199

an important piece of work that should be prioritised across Government. In response to our Report the Government should provide us with an update on this work and its planned timetable for it being brought to a conclusion. It must not become a stop-start endeavour. We endorse the work of NMIC as a valuable element in enhancing the national security of the UK. We will take a close interest in its work and how it develops in the future. We are not currently persuaded by the suggestion that NMIC could evolve to become a decision making centre. This would represent a considerable change in the way Government undertakes maritime security and safety operations particularly at a time of major change in the defence arena.

116. We believe that there is room for further improvement in cross-government cooperation in maritime matters. We are not convinced that an “informal group of Ministers” is the appropriate forum for taking forward the debate on maritime surveillance issues. Although decisions may ultimately be made in Cabinet or the National Security Council, we recommend that there should be a greater level of ministerial involvement in maritime surveillance as an issue particularly given the number of cross-government interests involved and as a way of arbitrating disputes between departments and ensuring that the differing interests are focusing on the right areas at the appropriate time. In response to our Report the Government should also provide us with an update on progress on the Maritime Security Oversight Group’s work towards a single air surveillance contract. This should include the alternative options that the Government is considering as a potential model for the UK in this area.

## 6 Conclusions

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117. We agree with our witnesses that there is a risk associated with the capability gap in maritime surveillance. We acknowledge that the Government accept this and we welcome the work being undertaken to investigate how to mitigate the risks inherent in the gap and ensure the longer term provision of maritime surveillance. The MoD asserts that it has robust risk assessment and management procedures in place to spot any risk escalation in the maritime surveillance arena, but we remain unconvinced it has the capacity to respond to any sudden escalation in that risk. Furthermore we believe the risk is likely to worsen in the medium term as further maritime surveillance capabilities are withdrawn or not yet filled. The UK's maritime flank is likely to be increasingly exposed: this risk must be kept under close and continuous review, and we will continue to take a close interest in the MoD's work in this area.

118. The MoD has acknowledged that there is a strategic and national security requirement for maritime surveillance. We are concerned that the MoD is sending mixed messages in respect of the need for a maritime patrol aircraft (MPA). On one hand it says that there is no requirement for such an aircraft and that it is not funded or in the programme but on the other hand it acknowledges that its absence is a risk and something may need to be done. The MoD must explain why it is satisfactory to wait until 2015 or beyond before deciding how to close the capability gap in maritime surveillance particularly as the MoD acknowledge that a MPA is the solution in the short to medium term. We commend the work that the MoD is undertaking to explore the wide range of possibilities such as unmanned aerial vehicles, lighter-than-air vehicles and space technology, for the future long-term provision of maritime surveillance capabilities. This work must not be allowed to lose momentum, particularly as no one individual is responsible for maritime surveillance in the MoD.

119. There is a wide demand across Government departments and agencies for maritime surveillance capabilities. The establishment of the Maritime Security Oversight Group and the National Maritime Information Centre are welcome first steps towards a more strategic and coordinated output and as a way of mitigating some of the capability gaps. The challenge is to develop these further and we are keen to see a more prominent ministerial role particularly given the number of cross-government interests involved and as a way of arbitrating disputes between departments and ensuring that the differing interests are focusing on the right areas at the appropriate time.

# Formal Minutes

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**WEDNESDAY 5 SEPTEMBER 2012**

Members present:

Mr James Arbuthnot, in the Chair

Mr Julian Brazier

Sandra Osborne

Mr Jeffrey M. Donaldson

Sir Bob Russell

John Glen

Ms Gisela Stuart

Draft Report (*Future Maritime Surveillance*), proposed by the Chair, brought up and read.

*Ordered*, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 119 read and agreed to.

*Resolved*, That the Report be the Fifth Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

Written evidence was ordered to be reported to the House for printing with the Report, together with written evidence reported and ordered to be published on 26 March and 15 May 2012.

*Ordered*, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Wednesday 12 September at 3.00 p.m.]

## Witnesses

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### Tuesday 17 April 2012

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**Mr Rod Johnson**, Chief Coastguard, Maritime and Coastguard Agency. **Rear Admiral Tony Rix CB (retd.)**, and **Dr Lee Willett**, Senior Research Fellow, Maritime Studies, Royal United Services Institute. Ev 1

**Edward Ferguson**, Head, Defence Strategy and Priorities, **Rear Admiral Ian Corder**, Commander Operations Maritime Operations, **Air Vice-Marshal Mark Green CBE**, Director Joint and Air Capability and Transformation, **Air Commodore Robert Noel**, ISTAR Force Commander, **Captain Russell Pegg OBE**, Head, National Maritime Information Centre, and **Group Captain Tom Bennington**, Deputy Head Underwater, Ministry of Defence Ev 9

### Wednesday 23 May 2012

**Nick Harvey MP**, Minister for the Armed Forces, **Air Vice-Marshal Mark Green CBE**, Director Joint and Air Capability and Transformation, and **Tom McKane**, Director General for Security Policy, Ministry of Defence Ev 21

## List of printed written evidence

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| 1 | Ministry of Defence  | Ev 34; Ev 49; Ev 51; Ev 52; Ev 53 |
| 2 | Dr Lee Willett, Senior Research Fellow, Maritime Studies Royal United Services Institute | Ev 54                             |

## List of additional written evidence

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| 1  | Rear Admiral James Rapp CB  | Ev w1  |
| 2  | Coastal Command and Maritime Air Association (CCMAA)  | Ev w2  |
| 3  | Admiral Sir John Woodward GBE KCB and colleagues  | Ev w5  |
| 4  | Air Vice-Marshal A L Roberts CB CBE AFC RAF (retd.)   | Ev w16 |
| 5  | Squadron Leader R W Forbes  | Ev w20 |
| 6  | Angus Robertson MP, Westminster SNP Leader and Defence Spokesman, Scottish National Party (SNP) | Ev w24 |
| 7  | Thales  | Ev w28 |
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| 9  | Dr Sue Robertson  | Ev w31 |
| 10 | Northrop Grumman  | Ev w39 |
| 11 | Airbus Military   | Ev w43 |

## List of Reports from the Committee during the current Parliament

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The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

### Session 2012–13

First Special Report	Ministry of Defence Annual Report and Accounts 2010–11: Government Response to the Committee's Eighth Report of Session 2010–12	HC 85
First Report	Ministry of Defence Supplementary Estimate 2011–12	HC 99
Second Report	The Armed Forces Covenant in Action? Part 2: Accommodation	HC 331
Third Report	MoD Main Estimate	HC 133
Fourth Report and First Joint Report	Scrutiny of Arms Exports (2012): UK Strategic Export Controls Annual Report 2010, Quarterly Reports for July to December 2010 and January to September 2011, the Government's Review of arms exports to the Middle East and North Africa, and wider arms control issues	HC 419

# Oral evidence

## Taken before the Defence Committee

on Tuesday 17 April 2012

Members present:

Mr James Arbuthnot (Chair)

Thomas Docherty	Penny Mordaunt
Mr Jeffrey M. Donaldson	Sandra Osborne
John Glen	Bob Stewart
Mr Dai Havard	Ms Gisela Stuart

### Examination of Witnesses

*Witnesses:* **Mr Rod Johnson**, Chief Coastguard, Maritime and Coastguard Agency, **Rear-Admiral Tony Rix CB (rtd)**, and **Dr Lee Willett**, Senior Research Fellow, Maritime Studies, Royal United Services Institute, gave evidence.

**Q1 Chair:** Gentlemen, thank you very much for coming to give evidence at the first evidence session into Future Maritime Surveillance. Could I ask you to begin by introducing yourselves?

**Rear-Admiral Rix:** Good afternoon. My name is Rear-Admiral Tony Rix. I served in the Royal Navy from 1975 until 2009 in the warfare operational branch and in my final two years I was the chief of staff to the NATO maritime headquarter in Naples from where we commanded a counter-terrorist and also a counter-piracy operation. I think that is the context within which you have invited me here today.

**Mr Johnson:** Good afternoon. My name is Rod Johnson. I am the Chief Coastguard. I have a note which may help you to understand the role of the Coastguard in the context of your inquiry if you are happy for me to read that out.

**Chair:** We will probably get to it in different ways by asking questions. Let us see how that goes and then perhaps at the end you might be able to give us it in writing. Would that be possible?

**Mr Johnson:** That is fine, Sir. Just to note that Her Majesty's Coastguard is part of the Maritime and Coastguard Agency and I am a civil servant appearing on behalf of Ministers.

**Dr Willett:** Good afternoon. I am Dr Lee Willett. I am Senior Research Fellow in Maritime Studies at the Royal United Services Institute with a broad remit to look at all things to do with the use of the sea, from naval all the way through to commercial aspects and everything in between.

**Q2 Chair:** Thank you very much. There are two groups of witnesses in front of us this afternoon. The first is you and the second group is largely from the Ministry of Defence. Starting with you, what are the main strategic requirements for maritime surveillance and how have those requirements changed and evolved over recent years? Who would like to begin? You don't all, by the way, have to answer all the questions if you feel that they have already been adequately dealt with. Rod Johnson, would you like to start?

**Mr Johnson:** In terms of the strategic requirement for maritime surveillance, the particular field that the

Coastguard looks after is covered in the Vessel Traffic Monitoring Directive, which is derived from the European Integrated Maritime Policy. Surveillance is an enabler of understanding the risk presented by sea traffic to the marine environment and the safety of the individual and to enable safe sea transport, commerce and the protection of the environment. So I suppose the specific answer to that question would be that surveillance is an enabler of that activity which is designed to underpin the well-being and prosperity of European citizens.

**Q3 Chair:** That is looked at from the civilian point of view?

**Mr Johnson:** That is correct.

**Rear-Admiral Rix:** I will not get into the detailed policy process. It would probably be best if I left that to the experts who are sitting behind me. I would certainly support Rod Johnson in saying that surveillance from my operational perspective, which ended two and half years ago when I left the Navy, was a significant enabler to all operations, particularly those that we undertook within NATO in the Mediterranean and also out in the Gulf of Aden. In terms of the process, I have been out of the Ministry of Defence long enough; I suspect that the process has changed.

**Dr Willett:** I have a couple of points to make. It is important to state from the United Kingdom's perspective that, given our position as a global power, one of the most important things that has changed is the understanding of the fact that our requirement for maritime surveillance is global. This requirement is made up of a combination of two elements: the home bit—looking after our own waters—and the away bit, which is looking after everything else as part of our global responsibilities, and our global commitments and interests.

It is important to state that maritime surveillance is not just about air and military assets, but a combination of environments, whether that be air, land, surface and sub-surface. It is a combination of naval and joint contributions, and a combination of the Ministry of Defence, other Government Departments and many others. There is a very important mix. One of the

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things that has changed, in particular, is the understanding that the UK needs to have a wider global coverage in terms of what it thinks about.<sup>1</sup> The oceans are a vast space and, stating the obvious, far larger in geographical nature than, for example, a particular country that we are looking at, at any one time. Our requirement for maritime surveillance is to look at all those spaces all the time. A degree of persistency is required in thinking about it, which I argue is not something that yet resonates in the tenor of the debate.

Geographical scope has increased in terms of our understanding, but also in that of others who use the sea. For example, with recent issues in respect of 9/11, air traffic moves now in a much more controlled environment and it is difficult moving over land borders. At sea, there is not that kind of inhibition. Non-state actors and others realise and recognise that they can move men, matériel and other things by sea far more easily. The sea is a cluttered, moving environment and things on it are very small, so there needs to be a degree of persistence and a degree of focus that is much wider than perhaps had been thought about in the past.

**Q4 Bob Stewart:** Dr Willett, you made a difference between home and worldwide surveillance. How far out in your estimation is home waters, when you are thinking of the Atlantic?

**Dr Willett:** That is a good question. One could argue that one's economic exclusion zone might be the limit of those borders, but there is, of course, a case that the approaches to those areas would be part of that as well. If one is looking at this from a European point of view, one could argue that our membership of the EU requires us to consider the European area. As an island nation, all the areas surrounding our coastline from 12 miles out—even perhaps to 200 miles—would be the starting point.

**Q5 Bob Stewart:** Out to 200?

**Dr Willett:** If one thinks about economic exclusion zones.

**Q6 Bob Stewart:** Not out to 1,200 nautical miles. Is there an area of influence that we are supposed to have some sort of responsibility for that goes out to 1,200 nautical miles into the Atlantic?

**Mr Johnson:** If I may answer that, the United Kingdom Search and Rescue region extends out to 30° west. It is approximately 1 million square miles of the eastern Atlantic. It is a very interesting question that you asked about our home waters. I think that it is probably easier to consider that concept in terms of time. At an average steaming speed of 15 knots per surface ship, where is home waters? Our area of operation extends out to 30° west to just short of the Arctic circle in the north, and down to an area just north of Cape Finisterre and then down the North Sea, English Channel meridian line.

We do not have situational awareness out to 30° west. In other words, we do not know what is there all the time, right now—only the compliant targets. But it is

an area that we look at and, of course, from a search and rescue point of view any British interests anywhere can be involved or can involve us. Some examples of that would be the searches that we do routinely in the Red Sea/Gulf of Aden area. If we get the distress alert through our satellite-based technology, we will deal with it—even the poor chap who was strangled in his camper van in the Brazilian jungle.

**Bob Stewart:** I do not want to delay, Chair. I will come back to that later.

**Q7 Chair:** Is the Ministry of Defence good at determining its maritime surveillance requirements? Are the strategic processes that the Ministry of Defence operates effective?

**Dr Willett:** It is an interesting question. One of the first things is to consider the MoD's position in the context of wider Government policy. There is a debate about whether we have, at a national level, a clear understanding of what our national maritime security requirement is. There has been a lot of debate in the last few years about the need for the UK to have a national maritime security strategy. That debate has stopped and started for various reasons.

It is really about more than just the MoD's contribution. The MoD's contribution within that is very specific, and focused on certain areas. Is the focus joined up enough between Government Departments yet? Certainly, it is better than it used to be. The MoD plays an important part in that. It is one of the agencies that naturally come to mind when one thinks about this, but when you consider the Department for Transport looking after shipping and other things; the Foreign Office looking after Overseas Dependent Territories; the Home Office looking after the UK Border Agency; and the Department of Energy and Climate Change looking at energy issues, there is a lot to mix into that. It is not just about the MoD.

Even internally in MoD, responsibility for surveillance as an issue sits across many desks, which makes it difficult to determine what the requirement should be. The UK is better at it than it used to be. Certainly, the political focus on it at the moment means that there is a good deal of attention paid to getting it right.

**Chair:** Rear-Admiral Rix?

**Rear-Admiral Rix:** Things will continually change. In my time in the Royal Navy and, indeed, in the Ministry of Defence, we went from a cold war era, when there was one particular surveillance requirement, and now we are dealing with counter-terrorism and counter-piracy, so the surveillance requirement continually changes. Yes, there is a good eye on that in the Ministry of Defence, and spotting the capability gaps and addressing them is an important part of this. From my operational perspective, the process is pretty good. It is a different question about getting those capabilities into service to fill the gaps and to meet the changing requirements.

**Q8 Chair:** Talking of gaps, Dr Willett mentioned the fact that it was not simply about maritime patrol aircraft. Do you think the debate has focused too much on that over the last few months?

<sup>1</sup> Note by witness: In terms of how it thinks about maritime surveillance.

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**Rear-Admiral Rix:** Yes, I do. My personal view is that it has. The debate needs to focus in capability terms, and find out what gaps there are and what means there are of filling them. These days, there is an increasing number of methods by which one can fill a surveillance capability gap in hybrid air vehicles and things like that—satellite technology. This will be an ongoing process of capability analysis, and then filling those capability gaps, looking across the board. In this context, and to answer your question, it is not just about looking at something like Nimrod, although that might provide a significant capability.

**Chair:** We will come back to those things.

**Dr Willett:** Just a quick point. One should point out that a maritime patrol aircraft capability is something that has been important. Without it, there is certainly a gap, because that capability provided an overall glue to the various layers of surveillance capability that we have. There is no current policy, I understand, or funding, I suspect, to replace that directly. What is new here is that we have a persistent wide-area surveillance capability requirement, as I mentioned in my previous comment—the need to be out further, looking at more things, more of the time. We have to find a way of addressing that. One might not necessarily think that one could do that, or afford to do it, with just an aircraft, so, as the Admiral mentioned, UAVs and other concepts are coming very much to the fore.

One of the things to bear in mind is that the MPA programme provided a particular capability to do certain jobs, and that is now gone. We are trying to fill that gap with other things. One of the risks, because of the current challenges that we face—budgetarily, operationally—is that you have a significant problem if you start picking holes in the layers underneath it. You are stretching those layers already—whether they be a Type 23 surface ship, a submarine or something else—to do part of that job. They are maxed out, stretched—whatever term one wishes to use—anyway. If you start chipping away at those capabilities without rebuilding them with another aircraft, UAV or a hybrid air vehicle of some sort, you will start not just to stretch the coverage, but to see some holes in it.

**Q9 Sandra Osborne:** You have started to address what I was going to ask you in relation to capability. In their response to this Committee's Report on the Strategic Defence and Security Review and the National Security Strategy, the Government acknowledged that, after cancelling Nimrod, there is "currently no single asset or collection of assets that fully mitigate the resulting capability gap" in the wider-area maritime surveillance. In your opinion, does that constitute a gamble or just a tolerable risk? What is your assessment of the risks involved?

**Rear-Admiral Rix:** My personal assessment is that it is the former; it is the gamble. It is a risk that we should not be taking for a number of reasons. First, we do not have the surveillance coverage that we used to have. Indeed, trying to regenerate that surveillance capability—the broad surveillance, particularly the wider-area persistent surveillance capability—at short notice would be very difficult. There are some

initiatives within the MoD to do that, but for reasons that we have gone into so far, surveillance—wider-area persistent surveillance—is an essential part, from my perspective, of the military world, enabling military operations. It is a gap that we should not tolerate.

**Q10 Sandra Osborne:** Are there any other views? Does anyone want to add to that? Do you think it is a gamble, or just a tolerable risk?

**Mr Johnson:** From the search and rescue point of view, and from the point of view of counter-pollution operations, Nimrod was in the inventory and now it is not. Therefore, our operations are simply restructured around not having it. I could not describe it as a gamble, or even a tolerable risk; it is just a change in state, and we operate in a changed state. The principle for mutual assistance between ships at range continues. From the civil maritime search and rescue perspective, from the counter-pollution perspective and from the traffic-monitoring perspective, I do not think I would be able to categorise it as either of those; it is just not there any more.

**Q11 Sandra Osborne:** Was the Coastguard consulted during the SDSR process about bringing in a capability gap?

**Mr Johnson:** I am sure you will understand that the decision to withdraw Nimrod was one for the MoD, and not for the Secretary of State for Transport. There were informal contacts at desk level as the SDSR was being generated. In terms of formal consultation, all I can say is that I was not formally consulted, but I am not aware of any activity that might have gone on elsewhere.

**Dr Willett:** One of the interesting things in this is the language of the SDSR, particularly in relation to this issue. On several occasions it talks in detail about the significant strategic requirement for the kinds of capabilities offered by maritime patrol aircraft and other assets. When talking about the deletion of Nimrod it does not explain why. It does not say, "We didn't need this"; it quite clearly said earlier in the Review that yes, we did need this kind of thing. It raises the question of what the political and policy considerations were behind why the Nimrod decision was taken.

You could ask whether there was an argument that it was a sacrificial lamb—whether it was making a point to the MoD and the defence industrial complex that you cannot carry on with that degree of overspending and overrunning programmes. Or were there arguments that the Nimrod MRA4 programme was not going to prove to be the one that was required? Of course, the language of the SDSR leaves open the debate about what to do next. Some of the statements made since then have led some to conclude that perhaps what was being done in the SDSR was getting rid of a potentially difficult issue, but leaving the door open for an off-the-shelf purchase of something else in the shorter term.

It is important to bear in mind that the debate has moved on, since we started talking about Nimrod as an aircraft, over the past few years. Our maritime surveillance requirement is about a lot more than just

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a maritime patrol bit from a MRA4 Nimrod point of view. As the debate is widened, and we think about piracy and wider surveillance, is the argument now that we think about something completely different as a solution, or having a combination of things to provide that solution?

**Q12 John Glen:** I would like to return to that. I recognise what you are saying: you had it before, and you don't have it now. There is a new operational reality, and you accept that. You have more than 25 years' experience in this field. You must have an opinion on what the loss of capability means practically, in terms of whether there is increased risk or not. I recognise that it is an uncomfortable thing to talk about, but the Committee is trying to get to the bottom of what the implications of this decision were for surveillance. I press you again: do you not have a view, given your 25 years' experience, of what this actually means, in terms of the impact on risk?

**Mr Johnson:** By way of background, obviously the oceans of the world are very large. The UK plays its part in providing search and rescue by means of its accession to the International Search and Rescue Convention. One of the tenets of that is that assets are shared and declared within the context of a global search and rescue plan.

It is true to say that there was a point at which the UK inventory included Nimrod as a maritime patrol aircraft, which, in the context of search and rescue, was capable of providing a systematic search over a wide area and locating a potentially non-compliant target. What has changed is that with the withdrawal of Nimrod from the UK inventory, there are simply other means at our disposal to provide that capability, if we wanted it. The existing arrangements, which are long-standing, with regard to the obtaining of assets from other Atlantic region states continue. If one of my officers was to come to the conclusion that they required the use of an MPA at range, then our standing arrangements to obtain that capability from other Atlantic basin states would kick in, and we would obtain an aircraft from them.

I understand the direction of your question, Sir, but the point is that we deal with what we have to deal with on the day, with what we have got. There are means of assessing what is available, and we use what is available to do the job.

**Q13 John Glen:** Yes, but that does not get to the heart of the matter, does it? What you have said is that there are contingencies in place and an array of opportunities to call on other assets in any given situation. What we are trying to get at is the relative strength and weakness before and after the decision, which has a material bearing on the quality of the capability the country has. It seems to me that, with your unwillingness to answer that directly, we are none the wiser.

**Mr Johnson:** Let me see if I can assist you further, Sir. Out to the extent of helicopter range, Coastguard surveillance aircraft are now in the search and rescue role. They are being refitted with more sophisticated comms equipment to enhance them in that role. That takes us out to about 200 miles from the nearest land.

When we get into oceanic territory, it is true to say that there is no current UK standing asset that we would go to as a first choice. We would be going to an asset that is based in Ireland, France, Iceland, the United States or Canada.

**Q14 Bob Stewart:** May I follow up on that? On this very point, what we are actually looking at is a gap between, say, 240 nautical miles—the limit of a Sea King at the moment—and 1,200 nautical miles, which is filled by other air assets from other nations. Not only is that a problem, but once the privatisation of our search and rescue assets happens, will we have capability even as good as we have now out to 240 nautical miles?

**Mr Johnson:** The first thing I would say, Sir, is that the word “privatisation” is not an accurate description of what is going to happen. The responsibility for search and rescue provision remains with the Government. The capability to discharge it will be provided by a contractor, which you can find other examples of. The service that will be provided is every bit as good as the service that is there at the moment. There will be no diminution of service once the arrangements change for the provision of SAR helicopters out to range.

**Q15 Bob Stewart:** Will they be able to identify a body in the sea at, say, 60 nautical miles, as a Sea King apparently can, possibly?

**Mr Johnson:** The sensor platform for the future SAR helicopters is every bit as sophisticated as what we have at the moment.

**Q16 Mr Havard:** As the Coastguard, with your search and rescue capability, you are explaining what happens in an emergency. You get a call and you have to respond. There is a series of assets that you can mix and match in order to deal with that particular emergency in that time. Dr Willett talks about persistence. He talks about having the persistent capability to see and—more importantly in some respects, I believe—listen across a wide range of the ocean. That fits back into your role in relation to the other parts of the Coastguard service, does it not? You have a relationship with smuggling, piracy, and all the other sorts of aspects that might come across your desk. Is there a gap, in terms of not necessarily being able to respond to an emergency, which we can do now perhaps by mixing and matching, and this longer-term question about a persistent capability? Is that the gamble?

**Mr Johnson:** I do not believe you could describe it as a gamble, and I would respond to you in two ways. First, “coastguard” is an interesting word; it means a lot of things to a lot of people. To try to decode that, internationally and within Europe, the activities that are needed to maintain dominance over a wider area such as an exclusive economic zone or a search and rescue region are called coastguard functions. They are customs, border control, pollution response, fisheries control, maritime safety, maritime security, vessel traffic management, accident and disaster response, search and rescue, and law enforcement. No one organisation in any state discharges those

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activities. In the UK, Her Majesty's Coastguard discharges six of those 10. Some things do cross my desk, and some things do not, but coastguard activities are not necessarily the purview of Her Majesty's Coastguard. Other departments contribute.

The second part is this: maritime surveillance activity covers a wide range of spectrum for different purposes. The NATO joint operational doctrine very clearly sets out what maritime surveillance is for military purposes. For civilian purposes, it is slightly different. Although situational awareness for search and rescue and counter-pollution would benefit from being systematic and continuous, it does not have to be systematic and continuous. I would defer to professional military opinion with regard to the requirement for persistent and systematic surveillance for military purposes. I do not feel comfortable answering that one.

**Dr Willett:** To draw some of those questions together, if I may, and particularly to respond to Mr Glen's point, we are talking about a variety and number of assets in all environments: air, surface, sub-surface and other. To an extent, all maritime assets, whether naval assets or others, are surveillance assets while they are out there doing their daily task. In response to your question, Mr Glen, about before and after and whether we are better off, certainly when you talk about it from the Royal Navy's point of view or from the MoD's point of view, the kinds of capabilities and systems that we have coming online in the future will be better in terms of capability, but there will be less of them. When we are talking about the requirement for an ever-increasing, expanding requirement of surveillance, that lack of assets will be significant. If you are trying to deal with problems up-threat, which the Review and the National Security Strategy talked about, you need to be out there, forward deployed, looking at and listening to things. With less assets, you struggle. The MoD, the Navy and other services are in the service of Government, in terms of responding to what Governments want.

If you look at the Libya operation, for example, it provides quite an interesting little case study on the kinds of challenges that we will continue to have in the future, because we had to go and draw a large number of assets from doing other things into supporting that operation. It was an operation that it was in our strategic national interest to support because of our alliance commitments, our national interest and everything else, but to do that, from a naval point of view, for example, we had to pull ships off other taskings such as looking after the South Atlantic. There were one or two issues to do with the number of assets we could provide for counter-piracy while we were doing that, and even before Libya, the Government announced that they could not provide a destroyer or frigate to undertake the Caribbean guardship patrol task for a while.

You are seeing these gaps appear. You have a web of a number of capabilities—a number of systems—doing different things that come together, but as you are stretching that capability ever tighter, you are drawing out holes that are gaps. You can fill some of those with new systems, and some with alliance contributions, but the question is: from a policy level,

do we understand the importance of maritime surveillance for maritime security as a whole, and are we prepared to underwrite the capabilities required to ensure that we have sufficient coverage for what we want to do?

**Chair:** We have got a lot of ground still to cover.

**Q17 Sandra Osborne:** Again, Dr Willett, you have pre-empted my question by talking about the use of all these other resources. The Government have said that they will partly fill the gap by maximising all the different assets that are available. What I get from what you are saying is that, in terms of Libya, it was effective, but it meant leaving big gaps elsewhere. Is that a fair assessment?

**Dr Willett:** Yes. In the work that we have done at RUSI, which is based on publicly available evidence, we looked at what the Royal Navy, for example, contributed to the Libya operation. The Royal Navy was required to pull assets off other tasks that are of significant national importance at the same time to cover that. That is a policy choice that the Government made.

**Q18 Sandra Osborne:** So it is not really an effective way of filling the gap.

**Rear-Admiral Rix:** Absolutely. I would argue that the fewer assets you have, the more important it is to have effective, wide-area persistent surveillance. If I look at the operation that I was part of in the Mediterranean—a counter-terrorist operation—that relied heavily on understanding what was going on in the Mediterranean. We had relatively few ships, and I think we were fairly imaginative in how we filled that gap. That operation is now going from a platform-based operation to a network-based operation. Fundamentally, that operation depends significantly on good surveillance, so I would argue that surveillance is even more important than it was when we had more assets.

**Q19 Mr Havard:** I want to explore this question of Allies and the future. Some of the reliance is on capability that we get from elsewhere in a number of circumstances. Basically, is the reliance on the provision of those other things from Allies sufficient? Is that going to be part of the future mixture, in terms of not necessarily having the things to do it ourselves, and part of the package always being allied provision? Is that sufficient?

**Rear-Admiral Rix:** Perhaps I can answer that, again, from my experience of the Mediterranean. This was a NATO operation, and we relied totally on force contributions from the nations, in terms of surface ships, the occasional submarine and maritime patrol aircraft. Towards the end of my time, in 2009, we might be lucky to get three maritime patrol aircraft sorties for six to eight hours a month, which did not fulfil our requirement. If we look at that from a national perspective, although our Allies are good, reliable people, there will be times, perhaps for security reasons, when we cannot rely on them and would not want to rely on them. Equally, there will be a time when our interests are not aligned, and our Allies have other priorities and wish to put their few

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assets to those priorities rather than ours. Relying on Allies, I would suggest, is not the way ahead.

**Dr Willett:** It can also depend to a degree on the task in question. If you are talking about looking after a deterrent, in my humble opinion, I would want to do that myself. If you are talking about contributing to a coalition operation, of course there is much more you can do, in terms of sharing with others, although if you look at the Libya operation again, the US provided a large part of the enabling layer, if you like, for the operation. What would happen if the US was not there in the future, or if it was, as it is now, overstretched?

If you look at the Olympics, for example, you would want to have a degree of national sovereignty in delivering the security for that, but the French, for example, might have an interest in supporting surveillance in the South-Western approaches. It depends entirely on the task. I also reinforce the Admiral's point that, of course, being reliant on others leaves you reliant on their decisions and priorities, which you cannot rely upon to be favourable when you need them.

**Q20 Mr Havard:** One of my colleagues will press you on that later. I was interested in what you said about the current assets being the current assets, that different people have them in different countries and that Allies can mix and match, but what about the changing nature of what you need to look at? You have talked about piracy and counter-terrorism. Are we planning to replace the requirement that was, or are we going to have a combination of things that will do the job that we predict for the future? Is there an opportunity as well as a gap in terms of changing the configuration of what you require for a newly defined set of tasks that you will be forced to deal with on top of—rather than, I suspect, instead of—the previous tasks? Is that thinking happening?

**Rear-Admiral Rix:** I do not know how the thinking is developing in the Ministry of Defence; I am not part of that now. Nevertheless, this is an opportunity to see what capabilities are available. We know what capabilities we require, but this is about how they might be delivered. In the Gulf of Aden, for example, where the European Union has a counter-piracy operation, we can provide a surveillance capability via either something like a maritime patrol aircraft or, perhaps, a hybrid air vehicle, which would just sit over the top of the Gulf of Aden. There are different ways of doing it these days, so we should grasp this opportunity and provide the surveillance via the best possible means.

**Q21 Mr Havard:** This is in terms of both seeing and listening, isn't it?

**Rear-Admiral Rix:** Yes.

**Q22 Mr Havard:** At the moment we have satellite imagery and so on, but when the batteries run out and the clouds come in you are in trouble. What is happening in terms of a combination of things to enable us to see the whole picture? We have lost a capability within a capability, in my opinion, namely

the ability to listen across the ocean rather than to just see across it.

**Rear-Admiral Rix:** Something like the maritime patrol aircraft will carry a number of different sensors, which will be looking and seeing and so on. Those sensors can be deployed in different ways these days—UAVs and hybrid air vehicles. How we deliver that capability is important.

**Q23 Mr Havard:** This is my last question. We are co-operating with Allies in order to retain our personnel capabilities, as I understand it, in the Seedcorn initiative. What is happening in terms of maintaining the ability to work this space—in terms of the people as well as the actual matériel—and what is your assessment of the timetable for the various points at which all of these changes should come together? By when do you want to fill the initial gap? What is your idea of the necessary timetable to put in place these replacements?

**Rear-Admiral Rix:** I would prefer to defer to the people at the Ministry of Defence. Nevertheless, I would say that that surveillance gap is with us now, so the sooner we can fill it, the better.

**Q24 Chair:** Do you have anything to add, Dr Willett?

**Dr Willett:** I would say that, as well there being a surveillance gap with us now, there is also a surveillance risk—the threats that we face are very current. I am sure that the Government and the Ministry of Defence are doing everything possible to ensure that we are covered on a daily basis, but the challenge in thinking about the future and the systems that may come online in five or 10 years is to not only deal with problems now, but retain the flexibility to adapt in the future.

One of the interesting things about this from a surveillance point of view, in terms of thinking about where we are going, is that there is a lot of debate in the EU about surveillance in terms of satellites and imagery, but you also need to have something to prosecute what you find. That requires assets on the ground or at sea—in this case, ships—whether they be coastguard assets, naval assets or others. One of the challenges is thinking about ways in which you can not only get enough information, sift it and disseminate it, but act on it. Again, that comes down to the issue at the sharp end of having assets at sea fully deployed, which you can then use to address the problems. That is something that needs consideration today, as well as for the future.

**Q25 Mr Havard:** Is it right that, when we talk about information, we really mean intelligence?

**Dr Willett:** I would not necessarily agree. Intelligence tends to suggest classified sources and everything else, but information comes from a variety of sources, such as just having a ship at sea that can monitor daily patterns of dhow movements—when they are going out to do certain things and when they are not—and noticing the differences. That is just using information that we pick up by being forward-deployed, which is slightly different from intelligence that is gained by satellites or electronic measures and other things. It is that presence that gives you that understanding.

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**Rear-Admiral Rix:** And one will turn that information, through analysis, into intelligence.

**Q26 Bob Stewart:** Forgive me for returning to the point, but on surveillance—particularly thinking of CSAR—Dr Willett said that we would be better in the future than we were in the past. Am I right in assuming that if you were in a satellite with heat-sensing capabilities, you could in the future see something the size of this document in the ocean? Is that the sort of thing that you are thinking of, because, quite frankly, I cannot see how we can get better in the future unless we actually have an aircraft? Your point, Admiral, was that we cannot rely on Allies to provide this surveillance. We cannot rely on Allies, but it is going to be better in the future, and therefore there is a dichotomy that I do not quite understand. How is it going to be better in the future when we cannot rely on Allies and will not have the aircraft that can look in close?

**Dr Willett:** If I may qualify my point slightly, what I meant was that one would assume that, from a technological perspective, what we will have in the future will be better as technology develops and your ability to do stuff improves. The technology for looking at things will be better. My point was that, on the one hand, your surveillance will be better in terms of technology capability, but if you do not have the number of assets to then cover everywhere you need to, that is the balance.

**Q27 Chair:** Do you have a view as to whether the maritime surveillance capability should be sovereign-based or procured off-the-shelf?

**Rear-Admiral Rix:** My view is that the answer would depend on the investment appraisal. Off the shelf is certainly an opportunity. Depending on whether you mean off-the-shelf new or off-the-shelf second-hand, you might have to spend a lot of money providing the capability. In investment appraisal terms, if that is better than buying something new that might be expensive, then fine. One should look at all options.

**Q28 Chair:** The Type 22 frigate has been withdrawn, which leaves a gap in capabilities. How should that gap, particularly in listening capabilities, be plugged?

**Rear-Admiral Rix:** I am afraid that that is not my specialist area. From my perspective, it is also a highly classified area.

**Dr Willett:** It is clearly a gap, and a very specific capability for electronic intelligence will be lost when the Type 22s come out of service, and one needs to replace that. I am not the most expert on them, but there are systems that can provide part of that. For example, I understand—although I stand to be corrected—that when Rivet Joint comes in, it may be able to provide part of that, but again you need to address the question of persistence. As I understand it, there is some thinking going on about this and about how to meet this gap within the MoD, but, as with all programmes, it is under current pressures—financial and others. However, I am not aware of any specifics as I do not believe that they are in the public domain.

**Q29 Chair:** Should we buy a new fleet of maritime patrol aircraft if we could find the money? P-8s, CN-235s, or anything else?

**Rear-Admiral Rix:** I will repeat my answer to the previous question and say that we should consider all options and see which gives us the best value for money in investment appraisal terms.

**Q30 Chair:** Could the Sentinel R Mk1 do maritime surveillance tasks if it were properly adapted?

**Rear-Admiral Rix:** I think the answer is arguably, “Yes,” but I would be surprised if it stood up in investment appraisal terms. I think there are only four or possibly five of them around at the moment, and I understand, from non-professional perspective, that some significant re-engineering might be required. However, you may wish to ask people currently serving for a better-informed answer.

**Dr Willett:** Its task is to deal with the very cluttered background ashore. As I understand it, it could therefore have limited application in terms of dealing with a very benign maritime environment, but, of course, the maritime environment is not always like that. Sentinel only gives you a surface capability, not the slightly deeper view that you would have had with something else, as I understand Nimrod did.

An interesting thing to bear in mind, though, is—to reinforce the point—the maritime patrol aircraft capability provided one part of a large number of things that we have in service currently. Going forward from here, when you consider the new technologies available—things like unmanned vehicles, hybrid air vehicles and so on that might, in the fullness of time, prove cheaper and provide better capabilities—you will want to consider a package of options that will give you an overall comprehensive approach. It is unlikely to be the case that one single asset will be able to do everything.

**Chair:** That is well taken on board.

**Q31 John Glen:** Building on that, it would be helpful to have your assessment of the use of UAVs and lighter-than-air vehicles. What contribution do they make to maritime surveillance as a free-standing set of assets working alongside aircraft? Can you give a perspective on the future evolution of those capabilities? How optimistic should the Committee be about the potential of UAVs and lighter-than-air vehicles? You might also want to say something about the role of satellites, recognising the context that those things work together, but also that our Allies have more advanced capabilities in that respect. How will that work?

**Rear-Admiral Rix:** I think that we should be very excited about the future capabilities that UAVs and hybrid lighter-than-air vehicles might offer. What I do not know is the time scale within which those capabilities could be provided to fill the existing capability gap, but I can see a time when our future aircraft carriers will be fitted with unmanned air vehicles, providing a level of wider area surveillance and assistance at both the operational and the tactical level. If you wanted to keep an eye on a particular vessel, you could maybe do that with UAVs.

From what I have seen, hybrid air vehicles certainly need to be looked at. Maybe the Ministry of Defence ought to consider some demonstration programme to see what capabilities hybrid air vehicles can bring. They can now transit at 70 or 80 knots, and can stay up for a long time. You can pack them full of all sorts of sensors. Their lift capability is huge. They are a way of providing capability that ought to be looked at. What was the third part of your question?

**Q32 John Glen:** The interaction with satellites.

**Rear-Admiral Rix:** Satellites are all part of the great mix. The trouble with the satellite is that it cannot respond—it is less responsive than other surveillance assets—but it is all part of the mix.

**Dr Willett:** Two small points, if I may. On satellites, it has obviously been the subject of much discussion that the UK does not have much capability of its own—the US and Europe have significantly greater capability—but we have, through Surrey Satellites, Novostar commercial satellite arrangement. As I understand it, that gives us limited time and access to that information, which limits capability, and also, as the Admiral said, it is very specific, but again, it reinforces the point about a wider layer.

To be cheeky and throw in a point about UAVs and carriers, as I think the Admiral mentioned, there is an important issue to think about going forward from here. You are well aware of the current debate in the press about the carrier decision. I have been looking into it, and one thing that has come out in terms of future-proofing the carriers that relates to the surveillance issue is that the discussion about STOVL or the carrier variant is based in large part around the launching mechanism. The important thing that gives you flexibility on carriers is the cats and traps launching mechanism, because it gives you an interim option in the first place and options beyond JSF for the future.

At the moment, as I understand it, there are numbers of UAV programmes being considered, but there are not many that would operate in a STOVL way. One thing to consider, when one is talking about a carrier, for example, is that the cats and traps thing gives you the flexibility to be able to deploy a greater range of UAVs in the future. It is part of the future-proofing debate.

**Q33 Penny Mordaunt:** Turning to the National Maritime Information Centre, what is your assessment of the advantages that it has brought? We recognise it is early days yet, but how could it be improved? That is an open question.

**Rear-Admiral Rix:** The head of NMIC will be providing evidence after this, but from my broader perspective I think it is a fantastic organisation. It will enable us to provide a single picture for maritime activity, with input from numerous agencies. The principle of it is superb. It has just had its first birthday, so it is still relatively new. It is definitely the way ahead. I have no personal experience of its output, so I should not comment any more.

**Mr Johnson:** HM Coastguard is one of the stakeholders at NMIC. We have a permanent liaison officer now established. The principle is extremely

sound in that what may in the normal pattern of life make perfect sense to my organisation will be of interest for a completely different reason to another. For example, it is very often the case that ships coming into the Thames Gateway that are of interest to us because of safety deficiencies are also of interest to the security forces, because safety deficiencies are a proxy for something else. That is a good example of where something that may look perfectly normal to one organisation could be of interest to another. Without some form of meeting house arrangement, that potential cannot be unlocked. That is the real value added that an organisation like NMIC can offer. It is worth noting that many other maritime states have something like NMIC.

It is developing extremely well. Your question was how can it be improved? I am sure Captain Pegg will be able to give you his views on that. From the Department for Transport's point of view, we are interested in looking at how the service level agreement that we are currently drafting with them can enable NMIC to operate while recognising the roles, responsibilities and liabilities of contributing departments, so that the best possible cumulative picture is presented to decision makers by NMIC.

**Dr Willett:** Just a couple of quick points from me, if I may. I want to endorse what has been said previously about the importance and success of NMIC to date. Certainly, senior Government officials have spoken publicly about how well it has performed, for example, in Libya. Again, the director of NMIC will follow and correct me if I am wrong, I am sure, but it has been a node for collating and infusing information so far, and it raises the question of what more can be done with that. For example, can it be turned into a centre that then makes decisions about what to do with the information or other things?

On my second point, going forward from here, in the context of the future of NMIC and how it is to be supported and sustained, is there the requisite level of effort to be able to do that? One important point to bear in mind is that NMIC came out of the 2009 National Security Strategy discussions when maritime security was raised as a threat to the mainland for the first time, but of course if you look at the parent documents either side of the 2009 version—the 2008 and 2010 versions—neither of them mentioned maritime matters at all. Quite strikingly for a maritime nation, there was no mention of the word “maritime” in the 2010 version, and only one mention in the 2009 version. The point is that when you have something such as NMIC, which is a new idea that is working very well, but which requires political support and resources, do you have the sustainable political focus on maritime issues to ensure that it and other activities like it are enabled to continue to develop?

**Q34 Penny Mordaunt:** To follow on from that, what would you say that the MoD's role should be in providing non-military maritime surveillance in such areas as search and rescue or border control, for example? What should be the lines of demarcation in a situation like that?

**Dr Willett:** Let me have a think. That is an interesting question, because there are some tasks that are clearly

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defined as civil and some that are clearly defined as military, and there are some in the middle, in a grey area. A Royal Navy ship at sea can do a number of things relating to a number of tasks. You have made the point about search and rescue, and when that hands over, I think in December 2016, there will officially be no military Royal Navy involvement in it. Sorry, I am not expressing myself very clearly. It depends on the task and how various Government Departments divide up their responsibilities. By definition, what navies and other assets have, by operating every day out at sea, by default, is the ability to provide a degree of surveillance that is non-military. That will be a free good, if you like, that they add.

**Rear-Admiral Rix:** I think the sharing of capabilities is clearly a way ahead that needs to be looked at, but there will be all sorts of problems in sorting out priorities. One day, we might want surveillance of the fisheries and at the same time the Ministry of Defence might want surveillance of the Mediterranean. It is a very sensible way ahead, but I suggest that one should not underestimate the practical difficulties of achieving something that is effective for all the stakeholders.

**Mr Johnson:** I would echo Admiral Rix's point of view here. I would sound a note of caution, however, that, as a meeting house and with everything that that offers, NMIC works extremely well. Picking up on Dr Willett's point, if you expand the role of NMIC or augment it to being an actor, I would sound a note of caution because what you are actually doing is reorganising the way that the Government currently do their security and safety operations for all things maritime. The participating agencies and stakeholders already have mature and well rehearsed practices for dealing with their particular issues and the value-add is, as I have said, recognising that what might be perfectly normal or appear perfectly normal within the pattern of life for one agency may be a trigger for something else. However, turning that into a decision-making cell would require the reorganisation of Government in relation to maritime. That needs to be carefully thought through.

**Q35 Penny Mordaunt:** Final question. What do you think of the Australian Coastwatch organisational

model? Again looking at greater integration and co-operation, do you see it evolving into something like that?

**Mr Johnson:** Coastwatch is not something that HM Coastguard has direct experience of, but as a general principle it is certainly an example that we would pay careful attention to and draw what lessons that we could from it.

**Rear-Admiral Rix:** The one point that I would make about Coastwatch, or the Border Protection Division of Customs, as it is now, is that I think I am right in saying that it covers only the exclusive economic zone. The military requirements for surveillance go way beyond that, as indeed SAR requirements will as well.

**Dr Willett:** It is a small point, but one of the interesting things about the Australian example is that they have a daily, very public issue in terms of border security and coastal patrol, which exercises the minds of politicians and the public alike: the boat transits across from Indonesia and elsewhere. They have a very high level of political focus on it; it is very current and remains so. We perhaps do not have that degree of public and political focus and they perhaps have a slightly more energised debate than we do about joining it up, co-ordinating it and ensuring that it works effectively, at least in public.

**Q36 Chair:** Thank you very much indeed. Is there anything that you feel that we ought to know that you have been shut off from telling us? Is there any question you wish we had asked that we did not?

**Rear-Admiral Rix:** I do not think so, no.

**Q37 Ms Stuart:** Unless I am really bad at interpreting body language, I wonder whether the Rear-Admiral thought, when we came to the question of UAVs, that there was something more we ought to say.

**Rear-Admiral Rix:** No. Perhaps I got excited, because I get excited by toys, gadgets and that sort of stuff. My point was that this is an opportunity to look at alternatives.

**Chair:** Thank you very much indeed. We now move on to our next group of witnesses, and I would be grateful for a speedy turnover.

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### Examination of Witnesses

**Witnesses:** **Edward Ferguson**, Head, Defence Strategy and Priorities, **Rear-Admiral Ian Corder**, Commander Operations Maritime Operations, **Air Vice-Marshal Mark Green CBE**, Director Joint and Air Capability and Transformation, **Air Commodore Robert Noel**, ISTAR Force Commander, **Captain Russell Pegg OBE**, Head, National Maritime Information Centre, and **Group Captain Tom Bennington**, Deputy Head Underwater, Ministry of Defence, gave evidence.

**Q38 Chair:** Thank you to our new group of witnesses for coming to give evidence today. You have been kind enough to give us some informal briefings in the past, which have been most helpful. We appreciate that there may be some questions that we will ask that you would prefer to answer in private, and if that is the case, please indicate. Of course, we would like to keep as much of this in public as is

consistent with security, so please bear that in mind, but indicate if it is not possible. Would you please introduce yourselves?

**Air Vice-Marshal Green:** Thank you very much, Chairman. I am Mark Green. I have a title, which is probably indecipherable for most of the general public, but suffice it to say, I look after information superiority and surveillance platforms, and the

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networks that join all those platforms together, for the Ministry of Defence.

**Rear-Admiral Corder:** I am Rear-Admiral Ian Corder, the Commander of Operations at the Naval headquarters in Northwood. My responsibilities are to command, on behalf of the Fleet Commander, all naval operations that do not involve Forces assigned to the Chief of Joint Operations.

**Air Commodore Noel:** I am Air Commodore Robbie Noel and I was recently appointed to be the Royal Air Force's ISTAR Force Commander. I have previously had a significant amount of experience, both on maritime Nimrod and also in exchange with the US Navy.

**Edward Ferguson:** Good afternoon. I am Edward Ferguson, Head of Defence Strategy and Priorities at the MoD. My primary role is to lead the MoD's contribution to the development of the National Security Strategy and the Strategic Defence and Security Review, but I am also the MoD's policy lead on the Maritime Security Oversight Group.

**Captain Pegg:** Mr Chairman, good afternoon. I am Captain Russell Pegg, Director of the National Maritime Information Centre. In respect of being here today, I represent the Maritime Security Oversight Group under the chairmanship of the Home Office, and therefore my comments are not necessarily related to the Ministry of Defence.

**Q39 Chair:** Thank you. You have heard many of these questions before, and as I say, if necessary, we will go into private at the end of the session. First, what do you think are the main strategic requirements for maritime surveillance? Will that change at all by, say, 2020?

**Edward Ferguson:** If I may, I will start at the national level and then explain how that translates into the MoD, in the way that we define our own capability requirements. The National Security Strategy set out a number of national security tasks, and that is really the starting point for considering what sort of capabilities Government need as a whole. As your previous witnesses said, this is not just MoD business. Maritime surveillance is delivered across a range of Government Departments and agencies. To some of those national security tasks, for example identifying and monitoring national security risks and threats, and protecting the UK and its interests, there is clearly a maritime surveillance aspect if you drill sufficiently far into them.

Through the Strategic Defence and Security Review we then translate that into the requirements for the Ministry of Defence, and we have seven military tasks, under each of which, I think it would be fair to say, you could bracket maritime surveillance to an extent. There is strategic intelligence, deterrence, defence of the UK and its overseas territories, providing support to civil organisations in times of emergency and so on. All have a maritime component, and we pull it out once we have defined those military tasks and the defence planning assumptions, which are really what the Government are asking defence to deliver. We translated that into the definition of our

Future Force 2020, which is then mandated to defence for it to go away and develop.

So, the simple answer is that Future Force 2020 is our best guess at what the current and future requirements, looking out over a 20-year time frame as the National Security Strategy does, are likely to be. Clearly, we need to keep that under review, and we are now signed up to quinquennial defence reviews, which will allow us to do that in a structured sort of a way.

I think that it would be fair to say, though, that if you looked in the Ministry of Defence annals you would not find anywhere where it says, "Here is the statement of the maritime surveillance requirement for the MoD," and I think that that is a manifestation of a capability, which, as your previous witnesses explored a bit, is an enabling capability that sits across a whole range of different platforms and functions, and indeed across the various domains of air, sea and land. So, there is no single person who is responsible for formulating the maritime surveillance requirement in its own right. I do not think that that is necessarily a problem; it is the nature of the capability that it is spread in that way, across platforms the primary role of which is not always maritime surveillance but which can perform a function that involves maritime surveillance.

You asked about looking forward. We will keep things under review as we go forward. Future Force 2020 is our best guess, as I say, but we need to keep a close eye on how the world develops. Counter-piracy is a relatively new phenomenon—it was certainly factored into the priority that was given to some of these factors during the last review—but new things can emerge all the time. I think that all the different factors, including the increasing importance of the Asia Pacific region, including to our Allies and what that means for the capabilities that they are developing, and some of the operational concepts such as air-sea battle, and what that means for our ability to pursue interoperability with our Allies, will need to be kept under close review as we go forward, to make sure that the force that we are building is on track and is going to give us the capability that we need to deliver the military tasks that I mentioned at the beginning.

**Q40 Chair:** You mentioned no one person being in charge of the various different platforms, but there is Joint Forces Command. What will the role of Joint Forces Command be, and how will it be integrated?

**Air Vice-Marshal Green:** Obviously, the role of Joint Forces Command is emerging. It stood up on 2 April as a going concern.

**Chair:** So it is days old.

**Air Vice-Marshal Green:** It is days old, but going with a pace, if you know its commander.

Its role is to make sure that we have coherence across military capability, especially in the area of information. You could argue that in the past the single Services have neglected priority investment in the networks that join defence together, we, as military officers, have been keen to invest in platforms as opposed to, necessarily, in the information gatherers and then processing that information and

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turning it into intelligence. The Joint Forces Commander will be the Defence Authority for information, and consequently we now have a single focus person who will be responsible for generating the information that defence needs to do its business. So, for me, and I think for the majority of my colleagues, it is a very positive step in having a single champion to provide that glue in critical areas such as the ISTAR environment.

**Q41 Chair:** There are two possible suggestions. The first is that because we have been looking at the demise of Nimrod, we have been looking too much at aircraft and that has skewed the debate somewhat, and the other suggestion is that because we have been focused heavily in Afghanistan, there is too much land-based surveillance. Would you say that either of those had validity?

**Air Vice-Marshal Green:** If we consider the second one first, Afghanistan has certainly skewed our investment, but it must be remembered that the investment in ISTAR for Afghanistan has been through NACMO, so it is additional money—

**Chair:** Through what?

**Air Vice-Marshal Green:** The net additional cost of military operations.

**Chair:** Thank you.

**Air Vice-Marshal Green:** So it is Treasury money. If you took away the Urgent Operational Requirements out of Afghanistan, there has been no additional investment from the MoD into providing the information required to conduct operations. Indeed, we have actually found strengths in some of our platforms that we probably did not know were there. The Sea King has been a great asset in pursuing insurgent operations in Afghanistan as we sit here today. So Afghanistan has provided us with a focus, but it has not actually skewed the balance of investment.

Going back to your first question, bearing in mind that I have been involved in several sessions with you and your special advisers, we have not talked about Nimrod that much, it has to be said. We have been very much looking forward, in terms of how we see this risk—do we see it as a risk and how do we see ourselves closing that risk in the future? However, there is no doubt that the MoD's underlying view is that an aircraft is likely, over the medium term, to be the solution should we need to fill the gap that was created when we took the Nimrod out of service. In the longer term—probably 20-odd years further—technology is likely to provide us with the opportunity to use unmanned systems, especially in the underwater space. That is the critical area that Nimrod could satisfy. So it comes back down to an aircraft, and that came out of a study that we have shared with your team, but that has not necessarily skewed the broader debate within the MoD.

**Q42 Chair:** In talking about the underwater area, are you talking about unmanned underwater vehicles?

**Air Vice-Marshal Green:** Correct. That is high-end technology that is not even on the feasibility board at the moment.

**Chair:** Well, lots of companies are demonstrating their wares at the moment.

**Q43 Sandra Osborne:** What do you mean by the “medium term” when you say that an aircraft is the answer in the “medium term”?

**Air Vice-Marshal Green:** I look at the rest of this decade and the 2020s, and 2030 and beyond. I can well see that unmanned systems could provide us with capability in the underwater space. The previous witnesses talked about hybrid air vehicles and indeed that is part of our broader information, surveillance, reconnaissance-type debate that we are having about the future, because we have a number of assets that provide surveillance. Clearly, this debate is about maritime surveillance, but we look at surveillance across the complete environment—across the land environment and across the maritime environment. And there are platforms that are not that far away that are unconventional, if you like, to our inventory, but that could help us with that debate. However, they will not provide us with the full cross-section of capability that an aircraft would provide in the next 15 to 20 years.

**Q44 Sandra Osborne:** In the here and now, you have already acknowledged that the capability gap cannot be fully mitigated at present, but that the use of other assets will be maximised. How is that working out in practice?

**Rear-Admiral Corder:** As the practical manager of this on a day-to-day basis across many of our areas of business, I would start with the point that Dr Willett made: maritime surveillance is a very complex creature. It is made up of a very wide range of capabilities—in sensors and assets—that overlap in interlocking layers. What we have done with the removal of the maritime patrol aircraft element of that is take one of the bits out of that, which has resulted in a need to compensate from other bits of the tapestry. Has it made the overall layer cake thinner? Yes. Has it actually led to holes? No, I do not think so yet.

To echo what Rod Johnson said a bit, we have modified operational design where necessary in order to mitigate the consequences; we have learnt more heavily on other surveillance assets; and we have exploited to the maximum potential information from Allies from existing arrangements. Obviously, the details of that tend to border on the highly classified, but I can say that to date I do not think that circumstances have arisen where unacceptable levels of operational risk have accrued due to those changes. Looking ahead, in the short term, I am reasonably confident that I can continue to manage acceptable levels of operational risk, but over the medium to longer term, clearly, as circumstances, threats and Allies' priorities change, that will have to be kept under constant review.

**Q45 Sandra Osborne:** Would you be able to share with the Committee any problems that have been experienced, especially where persistence was required?

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**Rear-Admiral Corder:** There is no particular example where I would say that there were overarching problems. I would say that we use the word “persistence” in terms of the MPA; we have many other persistent assets. 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.

I have not struggled with persistence per se. I could give examples from Libya, where we had to modify our operational design to utilise the SKASaC helicopters—the air surveillance helicopters used in Afghanistan. Had we had more MPA support—we did have some MPA support from Allies—we would not have had to depend on the SKASaCs as much. There is no area particularly where I have had an insurmountable problem arising from the lack of the totality of the capability of an MPA so far.

**Q46 Sandra Osborne:** Previous witnesses appeared to believe that the risks currently involved are a gamble, rather than just a tolerable risk. Do you still believe that the situation could be described as a tolerable risk?

**Air Vice-Marshal Green:** I think that the situation that we have today is a tolerable risk. If I go a bit further in that analysis, I think we will end up in a closed conversation, so at that point, I think that we had better draw stumps on that particular question, if you do not mind, and we will address it in a closed section.

**Rear-Admiral Corder:** As the person who wears that risk most of the time, I would firmly say that it is within the bounds of tolerable risk at the moment.

**Q47 Sandra Osborne:** Thank you. The MoD has undertaken a capability investigation into its long-term requirements. What was the rationale for starting that post-SDSR? Surely that should have been done as part of the SDSR process.

**Air Vice-Marshal Green:** We were faced in the SDSR with trying to cut our cloth according to our means, and there is no doubt that we had to make some very difficult decisions. An analysis of all the options available to us was done, and at that stage, the analysis was that deleting the MPA aircraft was the least worst option. Analysis was completed that looked at the capability gaps that we would create by deleting that capability. Afterwards, the study allowed us to look at what options there would be in future and whether we needed to fill the capability that we had just deleted, the timeline and the likely platforms. It was primarily financially driven, against a context of the current threat that we faced at the time in the SDSR and our funding priorities. It was a difficult decision that was the least worst at the time.

**Q48 Sandra Osborne:** So it was not so much a strategic review as a cost-cutting exercise?

**Air Vice-Marshal Green:** I would not like to comment on that.

**Q49 Chair:** Would you not?

**Edward Ferguson:** I don’t mind commenting on that. One of the big innovations of the National Security Strategy was the inclusion of the National Security Risk Assessment, which allowed us to drill into what we saw as the threat environment that we were facing over five and 20 years. That was a key factor in the decisions that we made subsequently about the level of tolerable risk that there could be. There is no doubt as well—the Government have been quite clear on this—that defence could not be immune from making a contribution to the overarching priority of reducing the deficit. We had to take a budgetary cut. That was a major factor in the requirement to cut our cloth, if you like, in terms of our capabilities. When it came down to it, we had to make a call. We had to lose some capabilities from somewhere, and we had to make a call about where we could do that—where the risks were acceptable. Nimrod was a painful decision. There is a capability gap. That has been acknowledged, but it was deemed the least worst of the options that were available against the threat environment that we faced at the time.

**Q50 Chair:** A painful decision. I think others, possibly even Government Ministers, have said that it was the most painful decision of the SDSR. Would you share that view?

**Edward Ferguson:** I think it was a painful decision. There were some very painful decisions around personnel as well. If you are one of those personnel, that probably feels quite painful. There were painful decisions that had to be made to get us into the right place to be able to deliver the future force that we are now aiming towards. I would not myself go for a superlative on any one of them.

**Q51 Mr Havard:** May I ask you where you see this all going post 2020? You have talked about an aircraft as a sort of interim possible solution to certain parts of this, which is new information to us. There will clearly be a great deal of reliance on Allies, presumably up to and post 2020. Could you give us some idea about what thinking there is, in relation to their use, our reliance on them and the questions that raises about operational and other sovereignty of the assets that we would require in that mixture?

**Air Vice-Marshal Green:** There are two parts to that question. The first is how we address the issue as we go forward. That is very much an SDSR 2015 debate, and the commitment from the MoD is that we will look at this capability gap and assess ways of closing it and its priority within our overall portfolio of capabilities as part of the SDSR 2015. You talked to the previous witnesses about Seedcorn capability. That is very much being put there in order for us to make sure that we have the option and the knowledge to re-grow that capability, should we decide to go back to this sort of capability. We think that we can preserve that without undue difficulty until about the 2019 time frame. It gives us that decision space.

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In terms of relying on our Allies—the previous witnesses talked about operational sovereignty—there is no doubt that there are very few nations, as part of our allied community, who actually have the full panoply of capabilities and can conduct any operation without relying upon others. That even goes for our bigger brothers within those communities. Provided that we are able to maintain close links with our Allies—we do that on a routine basis, with liaison through front-line commands, through various communities within the MoD, and through ministerial engagement—the willingness for other nations to help out at times of our joint choosing is deemed to be a low-risk option. Do you want to add anything on the SDSR?

**Rear-Admiral Corder:** We are using the term “reliance on Allies” a bit in this discussion. I would prefer to say that we collaborate with Allies. We have always collaborated with Allies. As I have tried to bring out, this tapestry of maritime surveillance capabilities on a global basis that Dr Willett talked about is largely beyond the truck of any nation. To do it properly, it is essential to draw together information from, and participate in, information exchange with Allies. It adds greater resilience and depth to the capabilities that we have got, so it is absolutely a common-sense approach, and it is the way to crack a very big problem.

Clearly, there is the degree to which we need a national capability that can enable us to deal with certain key elements of our national interest autonomously, or nearly autonomously, versus the degree to which we have discretionary participation in coalition operations on a global basis; that is a variable scale. Within that tapestry of relationships with Allies, we need to make sure that we manage to maintain the appropriate degree of sovereignty over those elements that really are important to us.

**Q52 Mr Havard:** I don’t disagree that we ought to do that. What I am trying to find out is how we are doing it, whether we are doing it and when we are doing it. You partly answered the questions about how you regenerate, but it is also a question of how you generate, presumably, because some of these capabilities will be new capabilities.

You started to talk about timetable. That is very helpful, because we expect the next SDSR to be in 2015, unless something else happens. There is a sort of set of milestones that are relatively predictable up to 2020. The nature is changing all the time. On this business about future-proofing—about changes relating to counter-terrorism and counter-piracy, and about having more operations in the littoral, perhaps, than in the deep sea—and all these questions about what asset mix you are going to put together to deal as best you can with these predictable future requirements, what work is taking place on all that, in order to fit it into an SDSR, so that you might buy some capabilities earlier, and buy and prepare for others later?

**Air Vice-Marshal Green:** Certainly, in this space we commissioned an information surveillance targeting and reconnaissance study in August. This was to look

at, over the next 15 to 20 years, the assets that we have to date, and whether we will be able to afford those assets in 15 to 20 years, and indeed ways of getting greater coherence in the equipment. I use the word “equipment” very carefully. You asked the previous witnesses about several capabilities and platforms, and about their ability to operate in different environments. Due to the way the technology is advancing, the opportunity to buy a single sensor that works equally well in a maritime space and over land has become more and more of an opportunity for us. Before, we would end up with bespoke platforms operating in bespoke areas, and that is very expensive. The challenge for my industry colleagues now is to look at opportunities for me to be able to buy a sensor and use it in various platforms—strap it to the bottom of a hot air balloon, put it on the back of a ship, put it in an MPA. I pay for one sensor and one support cost, and it provides me with information across the entire environment.

We are getting to that place, although we are not there yet. The study that we are doing at the moment is, again, going to be feeding the 2015 moment, with regard to how we drive coherence into our range of collectors—Sentinel, E-3D and so on—as we move forward. The maritime surveillance platform—the maritime patrol aircraft—clearly was a sensor, but it was an attack platform as well. We go beyond purely your question when we talk about Nimrod, because it is more than just a maritime surveillance platform. If you want to replace that capability, which is more than just surveillance—it is attack as well—that is where it gets difficult, in terms of future technology, if you step outside an aircraft. As Ian said, everything that we have at sea or in the maritime environment is a sensor. Everyone is collecting information, and whether it is on our vessels or aircraft, or on coalition vessels or aircraft, the challenge for us is to be able to call all that together, fuse it, and provide intelligence. There is a danger that the debate can range from bespoke to broad very quickly.

**Q53 Mr Havard:** We are trying to get you to help us scope where we are going to be in relation to all that in this Report. Part of the reason for trying to get the questions established is so that we know what questions we can ask at this particular time. You made a point about integration. May I go back to something that the Chairman asked about? Joint Forces Command is about the integration of decisions and understanding now. Is that right? Presumably DIS—Defence Intelligence Staff—are also involved in this, as well as the uniformed services.

**Air Vice-Marshal Green:** The defence intelligence community—DI—is part of Joint Forces Command, so the Chief of Defence Intelligence is now the Senior Responsible Owner for C4ISR. He sits below the Commander of Joint Forces Command and is effectively on point and responsible for coherent C4ISR, whereas the commander of Joint Forces Command is responsible for information. That exists. In fact, I have two responsibilities, because as you are probably aware, Defence Reform looked at pushing

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out capability management from head office to front-line commands, and that is welcomed as a way forward.

The only area that we were concerned about was that if you did that within the information superiority space—that is, the C4ISR of the world—there was a danger that you could end up driving incoherence while front-line commands, whether Army, Navy or Land, decided to invest or disinvest in particular areas. You could end up withering an overall capability. Consequently, my job will go into Joint Forces Command in the future, so it will be responsible for a single point of contact for running the information superiority portfolio.

I have two masters. One is in Main Building at the moment, and I have a dotted line to the Commander of Joint Forces Command, to continue to drive coherence in this space. That is positive. I now brief him, before he goes to the Armed Forces Committee, about where we should be seeking greater investment in the information superiority portfolio, and he then is able to fight that corner among the single Service Chiefs prior to going to the Defence Board for a decision to be made about where we invest. We saw positive outcomes from that, even in the short time that we have been operating in that mode.

**Q54 Mr Havard:** Thank you. I would have known some of that if I had read the papers properly before I came in, but that is my problem. The reason I ask the question is that in future, questions about the operation requirement for procurement and so on will be slightly different. We are trying to get an idea of who will make those sorts of decisions about what the requirements should be, as well as looking at the immediate gaps. You are talking about investment decisions.

**Air Vice-Marshal Green:** Yes. If the question was along the lines of whether I am more comfortable about whether we will have more joined-up decision making in future, my answer would be absolutely, yes, because of the creation of Joint Forces Command. That is a very positive step in driving coherence, and a champion in this area. The other important point is that the Commander of Joint Forces is also very much the connection into other nations' Ministries of Defence or capabilities. The person who is the top in driving coalition-type operations is very much part of his remit, just as it is the single Services' remit, but the information piece is very much his bailiwick. The single Services might go around discussing co-operation in relation to platforms and so on, but the Commander of Joint Forces would go across and talk about sharing information, networks and connecting at the highest level with the intelligence community and, indeed, across the broader community in defence—GCHQ and the other agencies.

**Q55 Chair:** So the Commander of Joint Forces is the champion for ISTAR? Does that mitigate the concerns you began with, Mr Ferguson, about there being no real champion for maritime surveillance? Am I being unfair?

**Edward Ferguson:** The point I was making was not about championship. Absolutely, the creation of Joint Forces Command is a really welcome innovation. It is critical that there is a champion role for things that are less exciting than shiny big toys, but that are important enablers. My point was essentially that, at the working level, there is no single capability area that manages the maritime surveillance across the piece. It would not be practical to have that, because capability is spread over so many different platforms and functions.

**Q56 Chair:** Were you here when Dr Willett said that there was an apparent inconsistency in the SDSR saying both that we need to concentrate more on ISTAR and get rid of the Nimrod platform, which does that?

**Edward Ferguson:** Yes. That comes back to my previous point. The fundamental context was one where there were tight budgetary constraints, and we had to make difficult decisions against a threat environment. It came down to a question of priorities, fundamentally.

**Q57 Chair:** But ISTAR was meant to be the SDSR's top priority, wasn't it?

**Edward Ferguson:** There were a number of priorities in SDSR. Nimrod was a valuable platform, as we have articulated, but it was part of a layered provision of capability, as we have said. The judgment that was made was that the removal of that layer would not totally expose us in the way that some other capabilities might.

**Q58 Ms Stuart:** It may be that my memory is failing me here, but I think it was the Air Vice-Marshal who talked about withering overall capabilities. Is that an area where we have withered our overall capability?

**Air Vice-Marshal Green:** There is no doubt that we have taken in a capability gap as a result of taking out the Nimrod.

**Q59 Ms Stuart:** A gap is quite different from withering. Gaps you can bridge, but things that wither have gone.

**Air Vice-Marshal Green:** I probably used the wrong language, then, and you were right to pick me up. Against the current level of threat, we have sufficient capability to provide us with a tolerable level of risk. That means that we use other equipment where appropriate to provide us with that capability. Again, we are unfortunately getting into a bit of a closed session.

**Q60 Ms Stuart:** No, we are not. There are some things you can no longer do. If capability has withered, it has gone.

**Chair:** She's written it down.

**Q61 Ms Stuart:** I thought it was a very interesting phrase that you used. If we go from having one capability to someone else doing the same thing and us mixing and matching, that is one thing—or do you want to talk about that later?

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**Air Vice-Marshal Green:** To be fair, we haven't withered MPA capability, because we created a Seedcorn of individuals, which allows us to de-wither at the appropriate stage.

**Q62 Chair:** What about the Type 22 surveillance capacity that has been positively taken out of service?

**Air Vice-Marshal Green:** I think we get into a closed conversation with that.

**Q63 Chair:** I thought we might. Is there any possibility of buying all the various maritime patrol aircraft off the shelf and adapting them to British requirements, or is that a question of money? I am thinking of P-3s, P-8s, CN-235s—all that alphabet soup stuff.

**Air Vice-Marshal Green:** To be honest, Mr Chairman, there are a number of capabilities out there, from the high end to lesser capable aircraft—from Nimrod-like to a marginal MPA-like capability that you could probably buy off the shelf. So they exist.

**Q64 Chair:** Are they being considered?

**Air Vice-Marshal Green:** They are not actively being considered, because we have not decided whether we have a requirement. There is no requirement to buy an MPA at the moment. There is not a genesis option. All the work that has been done to date has said that if the MoD decides to fill the gap, it would need to buy an aircraft. The question of whether the MoD actually wants to fill that gap has not been answered, and we see that as being part of the SDSR 2015 time frame decision. The challenge for my staff and my colleagues at the table is to make sure that we have the information available as we run into the 2015 SDSR, so that we can have a structured debate about whether we want to fill the gap and what the options are out there in the near term to fill it. We can then have a balance-of-investment decision about where the MoD decides to go post-2015.

**Q65 Chair:** The more you have to rely on other assets, such as Sentry, now that Nimrod has gone, the harder things will become when Sentry has the sort of problems we have been reading about in the press over the last couple of days. Would you agree?

**Air Vice-Marshal Green:** No, not necessarily.

**Q66 Chair:** But if you begin to rely on a thinner layer of assets, that will surely put more of a burden on those assets—the tougher things become, the more those strands will begin to break.

**Air Vice-Marshal Green:** Ian made the very good point that you are getting into a bit of a layer cake here in terms of capability. If you reduce the thickness of any of those layers—I have got to be careful about the word I use—that will affect their robustness, reliability and persistence in terms of our ability to generate them as and when we choose, so, yes, you are getting yourselves into greater levels of risk. Have we got to a position that is intolerable at the moment? No, we have not. Do we foresee that in the near term? No.

**Q67 Chair:** When do you expect to take a decision on a maritime patrol aircraft?

**Air Vice-Marshal Green:** Again, I see that as being a part of SDSR 2015.

**Q68 Chair:** Do you think you will be able to keep the Seedcorn initiative going until then?

**Air Vice-Marshal Green:** The plans that we have for people, and the places that we have those people at the moment, give us a capability to 2019.

**Q69 Chair:** So this fantastic procurement process will operate between 2015 and 2019, will it?

**Air Vice-Marshal Green:** Absolutely. If you look at whether we have confidence in that, a lot of our Allies are very keen for us to join their programmes on MPAs. As you said, there are existing capabilities on the shelf. If you look at the Rivet Joint aircraft, that is actually a pretty quick flash to bang, because we are taking aircraft off production lines that are already up and running; it is just a matter of getting the people trained and the aircraft qualified to be able to be used in the UK.

**Q70 Thomas Docherty:** You have already talked a bit about the UAV, but could I just bring you back to it? What do you believe are the relative strengths and weaknesses of UAV systems, lighter-than-air systems and satellites?

**Air Vice-Marshal Green:** We talked about that a little earlier with satellites. Perhaps we can start with that one. The bottom line is that satellites are pointing where they are pointing, and it will take you a while to get them to look in areas where you want to go. Equally, people know where you are pointing them, unless you have got a UK sovereign capability. Hence, if you are sharing that capability and asking someone to point in a particular direction, that might itself be a risk to national security. Satellites have physical limitations in how they collect their data, how much they can see and when they can see it, so there is always a degree of risk unless you own the capability outright.

If you come down the scale, we have the tactical-level UAV. When I say "tactical", I mean a soldier in Afghanistan who picks up a model aeroplane with a camera associated with it, and it is providing him and his commander with a 2-km range of information on what is going on around his particular space. That is really tactical-level information. As you move up into platforms such as Reaper, they get into the slightly more strategic space, because they can fly for quite a long time—on task for many hours—and they share their information with a collection of people, not necessarily just a single individual. You can put other sensors on such platforms and they can gather signal intelligence as well as the other task. But, ultimately, Reaper flies from a land base—it needs a runway to get airborne.

If you are being specific to the maritime environment, at the moment there is a gap in our capability to have an indigenous—by that I mean that it can fly off the back of a ship—UAV capability that is tactical and under the control of the Task Force commander within

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that particular environment. That is a capability gap that we are investigating closing over the near term.

**Q71 Thomas Docherty:** I notice that the Rear-Admiral is wearing his Queen Elizabeth cufflinks, but does the QE class give the Navy an ability to project UAVs to places where you could not otherwise go? Are you shaking your head? Will UAVs be deployed as part of the routine or standard package on the QE class?

**Air Vice-Marshal Green:** I think we are getting into closed territory.

**Q72 Thomas Docherty:** Going back to Mr Havard's question about Allies, what is your assessment of the ability to develop UAVs or lighter-than-air aircraft with our Allies?

**Air Vice-Marshal Green:** A number of individual Allies are very keen for us to pursue joint programmes. Indeed, there is a high degree of collaboration at the moment with the French: a UK-French medium-altitude air vehicle. I think there are opportunities, and they will exist in the future. What we have got to be careful about, again, is that at the moment we have got quite a lot of platforms in the UAV inventory, but we have got a gap in the maritime inventory. Actually, if you were to say to me—I am responsible for them all at the moment—"How do you see this going forward?", it kind of comes back to that study that I spoke about earlier. We need to get some coherence into the area and to look at the areas that we have neglected—not even withered because we have not even generated them in the first place—to invest in at this stage. Now, that is not "neglected" as in we have ignored it, but the context in which we have been operating post-SDSR has changed, there is no doubt about it.

As we start looking towards reducing our Herrick-type investment, we are going to be looking at building contingent capability. Part of that contingent capability is certainly providing us with a maritime surveillance UAV-type platform within the maritime space. That is work that my staff have got on the books already. There is a plan about how we will develop that over the next year to come up with capability demonstrations, so that we can get our head around the capability, the integration issues and how we see that going forward. That should then provide us with the genesis option to say, "We can buy off the shelf" or, "We need to go and build our own"; I do not see that one as a particularly viable option.

**Q73 Thomas Docherty:** On satellites specifically, do you think a greater and more effective use can realistically be made of satellites?

**Air Vice-Marshal Green:** In maritime surveillance?

**Thomas Docherty:** Yes.

**Air Vice-Marshal Green:** I would probably go to my experts in maritime surveillance. Are you saying to be able to replace MPA?

**Q74 Thomas Docherty:** I am not sure which phrase we want to use now, but we obviously have some

gaps. Is it perhaps more cost effective to have a satellite?

**Air Vice-Marshal Green:** Satellite time and capability are not a cheap option; it is an expensive option. Again, a satellite points to where it is pointing. If you look at maritime surveillance at the extremes—for example, we send some fast jets across the pond to America, and before Nimrod's demise, we used to take a Nimrod with us to provide us with search and rescue cover in that area. It was a huge comfort blanket when you are flying a long way over the water with a single engine, sitting on an ejection seat. Do we still do it? Yes, we do. Would I rely on a satellite to help me out at that moment? No. It is never going to be able to help me out at that moment, but I use other assets that will mitigate the risk to me and the others who fly in that particular environment.

Satellites have their limitations, and they will not provide us with the full panoply of capabilities across the space.

**Q75 Thomas Docherty:** But if you were to take a vessel of perhaps 40, 80 or 100 people, and you had to sail it 2,500 miles to have a look at something, I guess that it would be cheaper to use a satellite to do that job.

**Rear-Admiral Corder:** A satellite is a strategic asset, first of all. It is not necessarily that responsive, in terms of re-tasking satellites to do stuff. We do make extensive use of satellite-based information anyway. The point that I would make—this goes back to the UAV debate and to the interplay between the maritime and the land environment—is that the maritime environment and, in a sense, the surveillance problem, is one of scale, as Dr Willett brought out, and also one of granularity. Many of the lessons coming out of the land-based conflicts that we have had for a while in complex environments have taught us that a lot of the information you need as a tactical operation commander is about quite detailed levels of identification of people, individuals and intent, which is quite a difficult thing to identify sometimes, in a very complex, fast-changing and significantly not transparent environment. That, to a degree, is something that we are beginning to find—we are finding—in the maritime environment. If I look back maybe 15, 20 or 25 years ago to the cold war days, we were largely interested in radar blips: could we attack those radar blips with missiles, largely unconcerned about what other blips were around, because it was a Russian blip? It is much more complex than that now, hence the sorts of capabilities that have been developed for the land environment. As Mark outlined, they are probably where the real value-add and the real step change in enablement would apply in the maritime environment. That is why that is an area that is being actively pursued at the moment.

**Q76 John Glen:** I have a couple of quick questions about NMIC and how it could evolve.

**Chair:** You are prepared this time.

**Captain Pegg:** Yes.

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**John Glen:** I was anxious to bring Captain Pegg in. In terms of this issue that we discussed with the previous witnesses about NMIC evolving into a decision maker rather than an information gatherer, I would like to know your perspective on that. Perhaps, then, Mr Ferguson, in terms of inter-agency co-operation, you could say how you feel that that has evolved over the past year; where the prospects are for that to grow and develop; what some of the shortcomings might be; and what issues you have had to date, if there are any.

**Captain Pegg:** The birth of NMIC was certainly recognition by Government throughout its strategies—whether it was the NSS, the SDSR or even the context strategy—that no one single Department can do this alone when it comes to truly understanding what is going on in the maritime domain, not only around the areas of the UK but in areas of our national and global interests. I think it was recognition that there was good work going on in Departments—within the stove pipes of Departments—whether it be Defence, Transport, the Home Office, the FCO or whatever. Just bringing that together has brought immediate value to the bigger picture. That was very simply the model that was adopted, and we have seen that value delivered.

The challenge at the moment, which the admiral started to dwell on, is that it is not the dots on the screens. You may have heard me say before that there are no bad vessels. It is more about the context of those vessels; it is about the people, the operations and the practice. Bringing Departments together adds that true value to the bigger picture. Once you have got to that position, you can start really to understand what is important to you today and tomorrow, and start to militate against those risks through a cross-Government discussion, which ultimately will lead to, “What is the decision we are going to take in terms of the action we need to deliver?”

**Q77 John Glen:** Just quickly on that, obviously you have visited and you have seen all those agencies working together. Would it be a realistic assumption to say that, given the proximity to that information, it would be sensible for decisions to be made in light of that rather than for that decision-making capability to be detached?

**Captain Pegg:** That would be a very good train of thought, absolutely. I go back to what the Chief Coastguard said, namely that it would change the way in which Government do their business. That is not to say we should not change if it is the right thing to do, and we should certainly look at that as a next piece of work, but that is what it would require. The value we have seen added is just through conversation of having all those people together—those eureka moments have happened. The intellectual argument is over; it is really now, “What is the national appetite to go to the next step if that is what the nation requires to safeguard its maritime interests?”

**Q78 John Glen:** Mr Ferguson, perhaps you could enlighten us on what the next steps might be.

**Edward Ferguson:** Just to look backwards as well, there has been considerable progress over the past

couple of years. There was an internal review within Whitehall in 2009, which essentially thought we could do this in a more coherent way and in a more strategic way. That led to the birth of two main structures. One was NMIC, which was then signed off in the SDSR at the end of 2010. The other was the creation of the Maritime Security Oversight Group in its own right, which was initially chaired by the Cabinet Office and is now chaired by the Home Office. Really that is about governance. It brings together all the various Departments and agencies at policy level to try to become more coherent in how we do our business. There has been real progress at the operational level, and NMIC is the flagship programme. That greater interaction at the policy level is also really helpful.

There is more that can be done and more areas that we need to explore. For example, and I think this was hinted at in the previous session, aerial surveillance is an example of where there are currently three departmental agencies—the UK Border Agency, the Marine Management Organisation and the Maritime and Coastguard Agency—that have individual aerial surveillance contracts to do different functions. One area that we are certainly interested in looking at is whether we can bring those together into a single contract, which would be more efficient in saving the taxpayer money, and would provide a more coherent product. Another one is at surface level, where the UK Border Agency has five cutters for customs-type duties and the Royal Navy operates three river-class offshore patrol vessels in domestic waters. Again, enhancing the co-ordination of those vessels is important. If we go down that route, the governance and oversight arrangements that allow us to manage those more coherent and single contracts as efficiently as we can will be critical.

That partly gets to the point of that exchange you just had with Captain Pegg, in that the offshore patrol vessels, for example, perform an important maritime surveillance function, but they also have an interdiction function—they can do something about it. Ditto with the UK Border Agency. If we can try to work out how best we can manage those interrelationships and interactions, that starts to get us down the line in specific areas.

Whether we want to do it at a macro level, right across the board—I think it would be very challenging, not least because of the bewildering array of actors in Government, there are a lot of different Government Departments and agencies. As a previous witness said, there are well-worked-out processes and procedures for co-ordinating and de-conflicting between them. It is something we need to look at. We have talked about and we are working on a national strategy for maritime security, which is a vehicle that allows us to explore some of that, but it is a fairly long piece of work to try to get our head round some of this real complexity.

**Q79 Chair:** There are a few questions—fewer than I thought—that we will need to go into in closed session. Will the public and the press please now leave, so that we can round this off?

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*Resolved, that the Committee should sit in private. The witnesses gave oral evidence. Asterisks denote that part of the oral evidence which, for security reasons, has not been reported at the request of the Ministry of Defence and with the agreement of the Committee.*

**Q80 Chair:** Commodore Noel, I'm afraid we have not asked you any questions yet, but your time is no doubt coming.

I wonder whether you could please confirm that everyone on the benches behind you is part of your team.

**Air Vice-Marshal Green:** This is certainly the recognised team.

**Q81 Chair:** Right. I can confirm from our side. The areas I noted down included the issue of whether it was a tolerable risk; the issue of how the Type 22 gap is going to be filled, if it is; the issue of UAVs off the carriers. There was one other.

**Air Vice-Marshal Green:** Sea Kings.

**Q82 Chair:** Examples from Afghanistan and Libya about Sea Kings. Would you mind covering those to the extent that you feel it would be helpful to us for this maritime surveillance inquiry, please?

**Air Vice-Marshal Green:** I suppose picking them off one at a time, you will probably have to remind me, Chair.

**Q83 Chair:** Let us start with the Sea Kings, because that came up first, with examples from Afghanistan and Libya.

**Air Vice-Marshal Green:** Okay. I am trying to remember the context to that question. The way that the Sea King operates in Afghanistan at the moment and the way that it can operate in the littoral environment is by using its ground moving target capability in order to track insurgents as they are moving across open spaces. That capability was developed for picking up vessels, effectively slow-moving targets, and plotting them and interrogating them to find out whether they are friend or foe and whether they will respond, and then providing that target to somebody else. We have found a maritime capability that has a lot of usefulness in our operations in Afghanistan.

**Q84 Chair:** How long is the Sea King going to remain in service?

**Air Vice-Marshal Green:** The Sea King comes out of service in 2016 and it will be replaced by the Merlin in its entirety. The programme to replace the radar that is part of the Sea King Whiskey capability is called Crow's Nest. At the moment that is part of PR12 deliberations about when and if it is going to get funded, and when it will deliver. At the moment there is a programme to replace it. Its status is part of PR12, and unfortunately that is with the Secretary of State at the moment.

**Q85 Chair:** Thank you. Any questions about that?

You heard what Rear-Admiral Rix said about the removal of Nimrod not being a tolerable risk. You clearly disagree with him and said that we were getting into a closed session on that. Why do you think that it is tolerable to have no maritime patrol aircraft?

**Rear-Admiral Corder:** I think that across the tapestry of capabilities that I described earlier in my areas of responsibility—defence and the deterrent, general surveillance of what you would call UK home waters, operations in and around the Falkland Islands, contingent operations and operations in the Gulf—the overall collection of assets against the risks as they currently exist, and the way in which the potential risk adversaries are behaving, is manageable. But it is a very finely balanced equation, and it will change over time. The threat will change over time; the capabilities will flow in and out and the emphasis of allies may change. We need to keep it under constant review.

**Q86 Chair:** Specifically, Russian behaviour is changing. They are becoming more probing and threatening aren't they?

**Rear-Admiral Corder:** I think that we've got to be very careful about describing intent. \*\*\*

**Q87 Chair:** You are confident at the moment. When we are talking about \*\*\* that sounds like a less than ringing endorsement of your confidence.

**Rear-Admiral Corder:** \*\*\*

**Q88 Mr Havard:** A number of these concerns, as I understood it, were expressed because there was a particular concern about \*\*\*. You have helicopters in Cornwall, a boat up in Scotland, and so on. There is a new management task of bringing all the assets together to do this job, and maybe you would do it a little less than you did before, but you do it because it clearly needs to be done. There is a particular problem that needed to be managed initially and that caused a lot of concern. \*\*\* The thinner the resources, the more you have this management problem of putting packets and resources together at the time you require them to do the tasks you need.

**Rear-Admiral Corder:** \*\*\*

**Q89 Mr Havard:** But when they talk about the vulnerability of protecting the deterrent, it is more in that context than it is the context you described of a Russian flotilla going by.

**Rear-Admiral Corder:** \*\*\*

**Q90 Mr Havard:** Yes, but it has to be more intelligence-led now, presumably. You would do these things routinely in the past \*\*\*. Now perhaps you moderate what you do on the basis of the intelligence that you have. You might do it less because there is no perceived threat and because your intelligence tells you that \*\*\*

**Rear-Admiral Corder:** \*\*\*

**Ms Stuart:** Presumably I am allowed to quote from this document.

**Chair:** In private session I think you are, yes.

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**Q91 Ms Stuart:** It is the Ministry of Defence's memorandum to the Defence Committee inquiry into future maritime surveillance. Section 5.5 states: "The Department has acknowledged that the decision not to bring Nimrod MRA4 into service has had a number of capability implications." It goes on: "In summary, it has reduced our ability to conduct strategic intelligence gathering tasks, long-range anti-submarine warfare." Can you tell me what is the reduction in our ability to deal with long-range anti-submarine warfare?

**Rear-Admiral Corder:** \*\*\*. For example, if I had the position of a submarine and lost it for whatever reason, I would have had the option of inviting the Air Force to send an aircraft out to re-locate it, and that would have been a very powerful and potent tool to use in that role. I do not necessarily have that option now, so I may have to use a slower asset \*\*\*.

**Q92 Ms Stuart:** \*\*\*

**Rear-Admiral Corder:** I am not entirely sure what you are driving at.

**Ms Stuart:** \*\*\*

**Rear-Admiral Corder:** No.

**Q93 Chair:** \*\*\*

**Air Vice-Marshal Green:** \*\*\*

**Q94 Thomas Docherty:** I think we are getting some different body language at the back.

**Group Captain Bennington:** \*\*\*

**Q95 Ms Stuart:** I have one thought: the Spanish did not anticipate that \*\*\* so working on a long-term economic strategy with the Argentines may not be the way in which the Argentines operate.

**Rear-Admiral Corder:** I would contextualise that last observation. That was a theoretical study.

**Chair:** Yes, we hope so.

**Rear-Admiral Corder:** \*\*\*

**Chair:** We were there a month ago and we accept that. *[Interruption.]*

There is a Division in the House, but I am afraid that we still need to ask you two questions. The first is about the Type 22 \*\*\* and the second is about UAVs off the carriers. We will need a quorum of members to return after the Division and we should be back in 10 minutes. I am sorry to keep you waiting.

*Sitting suspended for a Division in the House.*

*On resuming—*

**Q96 Chair:** Right, we have a quorum, so can we continue please?

The gap created by the Type 22 withdrawal: how are we going to deal with that? There was the \*\*\*

**Air Vice-Marshal Green:** \*\*\*

**Q97 Chair:** \*\*\*

**Air Vice-Marshal Green:** \*\*\*

**Q98 Mr Havard:** Is it a direct replacement or does it do a little bit more?

**Air Vice-Marshal Green:** \*\*\*

**Q99 Chair:** So in any event, it is wrapped up in PR12 and we are waiting to see?

**Air Vice-Marshal Green:** \*\*\*

**Q100 Mr Havard:** This is a positive aspect of the trade treaty with the US then, is it? ITAR waiver problems or any technology transfers—

**Air Vice-Marshal Green:** \*\*\*

**Rear-Admiral Corder:** \*\*\*

**Air Vice-Marshal Green:** \*\*\*

**Q101 Mr Havard:** I suspect that the Chairman and I may be asking you questions about co-operation with \*\*\* in relation to some of these things.

**Chair:** I am sure we will.

**Mr Havard:** We will get to that.

**Q102 Chair:** I asked the earlier panel about the possibility of adapting the Sentinel R Mark 1. Is there any prospect of that?

**Air Vice-Marshal Green:** \*\*\*

**Q103 Chair:** What do you intend, or what is being considered to go on the Queen Elizabeth class, in terms of UAVs, hybrid air vehicles and helicopters for maritime surveillance?

**Air Vice-Marshal Green:** At the moment, there is no plan to necessarily put a UAV on the Queen Elizabeth class. That is not to say that it will not have one. However, there is the plan to operate Crow's Nest on Queen Elizabeth. So, could you see Queen Elizabeth sailing without Crow's Nest? No. Personally, I could not see that, unless it was going off into a very benign environment, but something would need to give it that comfort close in.

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Mark Green's view—do I see us flying UAVs off Queen Elizabeth? Yes, I do. Are they part of its inventory today? No, they are not.

**Q104 Thomas Docherty:** I do not think anyone knows what the inventory is of the carrier today, because that is a separate discussion. However, I am surprised that it is not in the current thinking, given the fact, Air Vice-Marshal, that you said in the public session that one thing that limits the UAVs is that they have to have somewhere to land. Surely the carrier is unique among the Navy's assets, and it is the only thing that would let you do it. Is that fair?

**Air Vice-Marshal Green:** Some of our UAVs will land on a dime vertically. Actually, they do not need runways necessarily to land on. However, I suppose conventional thinking is that if you want a UAV that is going to be airborne for a long time, you need to put a lot of fuel in it. If you want a lot of fuel in it, you need to launch it in a conventional manner, and if you want to launch it a conventional manner, is the runway long enough, and so on?

You end up in that little debate that we had earlier with the previous witnesses—you need a catapult and an arrestor wire to do it. Well, I suppose there is a bit of legacy thinking in that game, because actually, if you get into hybrid air vehicles, they can operate because they are effectively an airship, but use

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forward motion to generate lift. Actually, you get most of that lift off 20 knots across the deck and 15 knots of speed of the carrier, so suddenly you get yourself into something that is actually hybrid, but can carry a big sensor, and carry it for a long time. I do not think necessarily cats and traps, which was my nervousness, and a long runway is a particular challenge if you look to the future.

**Rear-Admiral Corder:** I think it is also worth saying—as we discovered with operations off ocean in Libya—that operating multiple different aircraft types off a complex large platform, like an aircraft carrier, is of itself quite an interesting deconfliction challenge. The work is still to be done, so it may not be that operating this type of capability off the carrier is the best place from which to operate it. As for operating it off other ships in company with the carrier, in fact, the trial that we are talking about would probably take place originally off one of our RFAs. But it is still an indigenous capability to the group.

**Q105 Thomas Docherty:** Do we know if the US has any plans going forward to use its carriers for UAVs?  
**Air Vice-Marshal Green:** \*\*\*

**Q106 Mr Havard:** I have a broader question about UAVs. There are lots of uses for different types of UAVs. Some can be weaponised; some might just have a civil purpose or whatever, such as utility companies wanting fly along wires to inspect their pylons. There are all sorts of different types, from little ones to pre-surveillance.

UAVs have now become a whole stretch in terms of the Government's policy. In terms of procurement, some of these things may have the basic platform that is then adapted in a number of ways. Presumably, there is some sort of broader centralisation and discussion about maximising the potential for this,

either through procurement in the sense of buying them, which might be the MOD and the Home Office, or arrangements to lease or require them in other ways. Is there some central discussion like that or is it just too damn complicated at the minute?

**Edward Ferguson:** Just as a slightly contextual point, as you know the Home Office and the MOD jointly sponsored the White Paper that we published recently on national security through technology. We set out the Government's policy in terms of how we buy in the national security space. There is to an extent a coming together in the procurement world conceptually around how we should buy things off the shelf where possible, and protect national security where we must. Does that lead directly into a conversation around meeting common requirements? Others will be better placed than me to comment on specifics. That is where we need to get to.

If you look at the SDSR, there are huge opportunities to spot commonalities and all sorts of things that Russell is doing at NMIC. It throws up these areas: a single area of aerial surveillance, as we talked about. There are opportunities to bring things closer together. We need to identify those opportunities and then try to exploit them.

**Q107 Mr Havard:** A BIS thing.

**Captain Pegg:** I think that you are slightly disappointed that it is not more joined up. I certainly know of some police constabularies who have some quite active UAV programmes within the European Union, but it is very stove-piped.

**Mr Havard:** No, I am not disappointed because I did not expect anything in the first place.

**Chair:** Thank you very much. We have kept you for far longer than we should. We are most grateful. That is the end of the private session, as well as the meeting.

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## Wednesday 23 May 2012

Members present:

Mr James Arbuthnot (Chair)

Mr Julian Brazier	Penny Mordaunt
Thomas Docherty	Sandra Osborne
Mr Jeffrey M. Donaldson	Sir Bob Russell
John Glen	Ms Gisela Stuart
Mrs Madeleine Moon	

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### Examination of Witnesses

*Witnesses:* **Nick Harvey MP**, Minister for the Armed Forces, **Air Vice-Marshal Mark Green CBE**, Director Joint and Air Capability and Transformation, Ministry of Defence, and **Tom McKane**, Director General for Security Policy, Ministry of Defence, gave evidence.

**Q108 Chair:** Minister and gentlemen, welcome to the final evidence session on the issue of future maritime surveillance. We seem to be in almost permanent session, Minister, but you are welcome this week, as you were last week. Would you care to begin by introducing your team?

**Nick Harvey:** Thank you, Chairman. I have with me Mr Tom McKane, Director General of Security Policy at the Ministry of Defence, and Air Vice-Marshal Mark Green, who is our Director Joint and Air Capability.

**Chair:** Thank you. You have to answer an Adjournment debate, which begins at 3.45 pm, I gather.

**Nick Harvey:** The Adjournment debate begins at 4 o'clock.

**Q109 Chair:** Okay. We shall be finished in time for you to do that. May I begin by asking whether you would regard the United Kingdom as a maritime nation?

**Nick Harvey:** Yes, I certainly would. We are an island nation with a proud maritime history and a global concern and sphere of influence.

**Q110 Chair:** Does it strike you as strange that the 2010 National Security Strategy does not include the word "maritime"?

**Nick Harvey:** No, not really, because it firmly acknowledges the point about our being an island nation, about our having global interests and commercial interests around the globe, many of which necessitate maritime transport. It is inherent in pretty well everything that the National Security Strategy says. I think you also need to read the National Security Strategy in combination with the Strategic Defence and Security Review, which clearly referred to the maritime picture at almost every twist and turn throughout the document.

**Q111 Chair:** As a strategy, though, do you think that it gives the right priority to maritime surveillance and our maritime security?

**Nick Harvey:** I think, as a global overview of what the United Kingdom's interests and security concerns are, the maritime nature of both our country and our interests is acknowledged squarely in the strategy. It

is simply chance, if you are saying that the word is not used, because I think the meaning is there throughout.

**Q112 Chair:** In the 2008 and 2010 national security discussions, the parent documents apparently did not mention maritime matters at all.

**Nick Harvey:** I am not familiar with the earlier of those two. I believe that both our security strategy and our defence arrangements recognise the significance of our maritime trade and maritime defences, and that nobody could really argue that the UK Government were turning a blind eye to the maritime picture.

**Q113 Chair:** Can we hope that the National Security Strategy, in its next iteration, gives it a greater degree of prominence?

**Nick Harvey:** It is certainly inconceivable that it would give any less attention to it. It will remain a fundamental part and parcel of our strategic assessment. Precisely how any commentary on that is worded would not be for me to presume at this stage, but I take your point.

**Q114 Mrs Moon:** Minister, in March 2011, in the *Official Report*, column 947W, on military aircraft, it was announced that there was to be a capability investigation on maritime surveillance capability. At that time, the Defence Committee was carrying out an inquiry into the SDSR and the National Security Strategy. Why were we not told that this review was under way?

**Nick Harvey:** We are having some difficulty identifying precisely which review you are referring to. I think Air Vice-Marshal Green now has an answer.

**Air Vice-Marshal Green:** If this is the wider maritime underwater surveillance study—

**Q115 Mrs Moon:** No, it was a capability investigation on maritime surveillance capability.

**Nick Harvey:** There were studies as part of the SDSR work, but those were conducted during the course of 2010. There has more recently been the study that the Air Vice-Marshal just cited. I presume that the reference in 2011 was either anticipating the more recent study, or a reference to some ongoing work from the earlier one.

**Q116 Mrs Moon:** It was on military aircraft.

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Nick Harvey MP, Air Vice-Marshal Mark Green CBE and Tom McKane

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**Air Vice-Marshal Green:** It may be pointing towards the ISTAR performance investigation that was started in August that year—well, that is when it produced its first outputs. It looked into airborne-related assets and how they contributed to the ISTAR picture in both the present and the future. Its primary job was to look at the 2030 time frame and, assuming either that we either had a flat defence budget up to that point or had looked at ways of saving money, at how we could drive greater coherence into our aircraft platforms that actually contribute to the ISTAR arena. That was a broad ISTAR study; it was not merely related to maritime surveillance. I think we spoke about that particular activity—the ISTAR performance investigation—in informal sessions with your advisers.

**Q117 Mrs Moon:** I can only tell you that in reply to a parliamentary question from me in February 2012, the Minister, Peter Luff, replied, “The Ministry of Defence has completed its capability investigation into its long term requirements for maritime surveillance capability,”—that is quite clear, I think—“but I am withholding the information as its disclosure would, or would be likely to prejudice the capability, effectiveness or security of the Armed Forces.” That does not suggest that it is about ISTAR at all.

**Air Vice-Marshal Green:** That study is the WAMUS study—wide area maritime underwater surveillance. The reason why that was not disclosed more broadly is that a very classified level of detail was in that report, and hence it was not open for broader dissemination at that point.

**Nick Harvey:** But we have supplied that to you on a privileged access.

**Q118 Mrs Moon:** You are saying that you have provided it.

**Nick Harvey:** Yes.<sup>1</sup>

**Q119 Chair:** Why then, if it was an underwater surveillance thing, was it included in *Hansard* under the heading “Military Aircraft”?

**Air Vice-Marshal Green:** The issue was related to: noting the decision to withdraw the Nimrod out of service, and if the MoD decided that there was indeed a requirement to fill that capability gap in the future, what sort of platforms would be required in order to satisfy it? There are lots of ifs and buts in there, but it presumed that there was going to be a requirement that was yet to be decided. If you assume that there was, what could you use? Could you use unmanned aerial platforms; could you use manned platforms? Could you use hybrid air vehicles and so on? We have already provided details of the conclusion to that. What that work has done is provide us with a level of underpinning research already, which we will then wrap into our capability investigations as we go forward to the Strategic Defence Review 2015. It was a fundamental piece of analysis to support our future direction.

**Q120 Mrs Moon:** Again I ask why the Committee was not alerted to the fact that this was being carried

out when we were carrying out our own investigation into the SDSR?

**Air Vice-Marshal Green:** It was well after the SDSR that that study was initiated, so I think there is merely a timing issue here. We have obviously provided the report to you now. It was not a study done prior to SDSR; it was done afterwards.

**Q121 Mrs Moon:** I think I will need to go back and check when we were carrying out our inquiry.

**Chair:** The report we produced on the SDSR was in July 2011.

**Q122 Mrs Moon:** And you announced it in March 2011 in the *Official Report*.

**Air Vice-Marshal Green:** Excuse me, I have to ask when the report actually concluded.

**Tom McKane:** 31 October.

**Air Vice-Marshal Green:** Yes, so the report concluded on 31 October 2011.

**Q123 Mrs Moon:** It is not about telling us what the report has concluded; it is telling us that the report was under way that would have been helpful.

**Nick Harvey:** But you were inquiring into the SDSR. With respect, this piece of work was not anything to do with the SDSR. It was considering the future and the sort of capabilities that we might develop in the future. It was not about the SDSR.

**Q124 Chair:** I thought that the most difficult decision that had to be taken in the SDSR was the decommissioning of the Nimrod aircraft.

**Nick Harvey:** It was indeed.

**Q125 Chair:** With consequences that fed into maritime surveillance.

**Nick Harvey:** Yes. With respect, everything that the Ministry has been doing after the SDSR process was complete is looking to the future—Future Force 2020, the sort of strategic decisions that we will have to make in 2015 at the next SDSR, and at micro-scale the annual budget cycles. I am not clear how it would have assisted your study of the SDSR during the spring of 2011 to have described every piece of work that we were doing looking to the future capabilities that we hoped to generate. The scope of your inquiry would have been endless if we had viewed it in quite that way.

**Q126 Chair:** No, it would have been reasonable, I think. If this was the most difficult decision that had to be taken by the Government in relation to the entire SDSR it would have been reasonable for you to have told us, “This is something we are considering.” Mr McKane, you were clearly involved in the run-up to the SDSR. I think, following the SDSR, you may have been told that it would be wise to start some work to look at the replacement of the Nimrod aircraft. Is that correct?

**Tom McKane:** It is correct that I was the lead official within the Department for the SDSR. I was not asked to do further work on this particular capability area after the SDSR. It was always assumed at the time that this was a subject that the Government would

<sup>1</sup> Ev 49

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**Nick Harvey MP, Air Vice-Marshal Mark Green CBE and Tom McKane**

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come back to at the next SDSR. The work that Air Vice-Marshal Green has described, which, as far as I can gather, was commissioned in the first half of 2011 but did not report until towards the end of 2011, was a piece of work undertaken by the capability part of the Department, which I am assuming, as Mark says, was looking ahead to the next review.

**Q127 Mrs Moon:** If we had been able to keep the Nimrod MRA4—if the decision had been made to retain that capability—would there have been a necessity or an urgency to carry out the capability assessment that you are talking about here, which may not have reported until after we completed our report, but still was pertinent to it?

**Air Vice-Marshal Green:** We need to be careful about my response in terms of the urgency. The reason why we did the report is that at the time of the decision, we clearly had an awful lot of expertise that was based around the maritime underwater battlespace environment. In order that we could ensure that we captured that capability before it dispersed, because there was no official requirement for it, the view—I am sure it was my predecessor's view—was that we should, as I do all the time, commission activity to ensure that we have an audit trail and collate the knowledge, so that we can then get ourselves into a better position to make a decision for the future and, indeed, inform a future SDSR. The work that we are kicking off literally straight after SDSR '10 is actually to start preparing for SDSR '15, and this is very much a fundamental part of that foundation work. It fits into our approach to generate seed corn capability, and seed corn is not only people flying other nations' aircraft; it is also harnessing the intellectual horsepower that sits behind that capability.

Conducting the WAMUS study was merely a way of making sure we knew exactly where we were, what sort of technologies there are and where we should be investing my defence money in the capability area over the next few years to influence our thinking in 2015. If the report had come up with the fact that you could actually use unmanned air vehicles, we would have actually started needing to do some more work to mature our thinking in that area. It was therefore merely a direction-internal work to guide my thinking in terms of where I needed to direct activity in the future. It wasn't any urgent requirement that came post that decision. It was merely the next logical thing to do to prepare ourselves for 2015.

**Q128 Mrs Moon:** If I can just go back to my question, would you have needed that report if we had retained the MRA4?

**Air Vice-Marshal Green:** No.

**Mrs Moon:** Thank you.

**Q129 Chair:** The report that we produced on the SDSR came out in July. The report on WAMUS came out in October.

**Tom McKane:** The end of October.

**Q130 Chair:** So would it not have been helpful of you, in the Government response to our report, which

came out in November, to have mentioned this? Let me help with you the answer—the answer is yes.

**Air Vice-Marshal Green:** Yes, I think it probably would have been helpful if we had thought more broadly about that particular topic.

**Q131 Chair:** Please bear in mind that, as a Committee, we feel significantly under-informed by the MoD. We feel you keep too much close to your chests, and it is time that you began to take parliamentary scrutiny a bit more seriously, because it is very important indeed. Please regard it as such.

**Q132 Sandra Osborne:** We have received evidence from Dr Lee Willett of RUSI, who posed the following question: “from a policy level, do we understand the importance of maritime surveillance for maritime security as a whole, and are we prepared to underwrite the capabilities required to ensure that we have sufficient coverage for what we want to do?” What is the Minister's response to that? Are you prepared to underwrite the capability, as Dr Willett suggests?

**Nick Harvey:** I can assure you and the Committee that we do take the entire maritime picture very seriously indeed, and we do recognise the importance of maritime surveillance for maritime security as whole. The SDSR was being conducted against a very difficult financial background. We had to decide what to do with the limited resources at our disposal and where, frankly, we were going to take an element of risk. We acknowledged in the SDSR where we were taking those risks. It is certainly the case that we highlighted this area of maritime surveillance as one in which we had taken what we thought to be the least bad option; we acknowledged that we were carrying risk but stated our belief that it was a tolerable level of risk to carry.

Certainly, I would acknowledge in the wider sense that the Navy is going through a very difficult patch while older platforms are working their way out and until newer ones work their way in. I think that we recognised from the outset that the Navy would go through a lean period before the up-curve came back through. That is what we have seen, but so far, despite the tests presented, for example by Libya last year, it has managed, and we believe that the risk we are carrying is acceptable, if regrettable.

**Q133 Sandra Osborne:** In relation to capability gaps, our report on Operations in Libya noted that, due to the operation, important maritime tasks were not carried out, and that due to the continued high levels of standing maritime commitments, this type of risk taking would occur more frequently as the SDSR was implemented, which I think you have just acknowledged. Given reports that the Royal Navy is unable fully to resource counter-piracy operations due to the Olympics, what commitment can you give to the provision of maritime surveillance assets when other naval assets are being reduced or redeployed?

**Nick Harvey:** I do not think that I would accept that the Navy has in any way abandoned any of its tasks. One of the points that Dr Willett made when he spoke to you was that some of the work—for example the

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counter-narcotics work in the Caribbean—has at times not been covered by a destroyer or a frigate but rather by the Royal Fleet Auxiliary, but I think that it has still been able to perform the task. Although I acknowledge and do not shy away from the fact that the Navy's assets are being heavily used at the moment and that we are taking a degree of risk, I do not think that I accept the proposition that you were putting to me that they have actually had to abandon any of their tasks altogether. They have just had to find other ways of completing them.

**Q134 Sandra Osborne:** So is it not true that counter-piracy operations have been affected by the Olympics?

**Nick Harvey:** It is true that during the course of this year the UK is not contributing any vessels to the various international counter-piracy missions. We continue, of course, to exercise command of the EU operation from Northwood, but I do not see why we would, in principle, at all times contribute vessels to those missions. We certainly expect to do so again as time progresses, in rotation with the other partner nations involved.<sup>2</sup>

**Q135 Mrs Moon:** We have been told that the capability gap in maritime surveillance is somewhere between a risk, a gamble and a tolerable risk. How do you keep this under review?

**Nick Harvey:** I say again that we do acknowledge that we are taking a risk here. We did at the time, and we continue to do so, but Ministers and policy makers in the Department are kept apprised at all times of the levels of risk that we are bearing, through an established process of risk identification and management. The Defence Board meets monthly and takes regular risk reports, which flag up on a red-amber-green basis where we are carrying risks. Certainly, if any of the military commanders or policy makers considers that risks are emerging over a period of time, there is there a mechanism by which they can flag that up to us.

Longer-term, strategic risk is an ongoing process between the capability area and defence intelligence, and that is reviewed annually as part of the departmental planning. Any excessive risk would be highlighted within the capability audit process. If we thought we were bearing an unacceptable risk, we have regular mechanisms at our disposal: the annual budget cycle, or, if there was something more immediate than that, we would take decisions in between times. There is a reasonably mature process there, and there is enough flexibility to respond, dependent on the alerts that were being put in front of us.<sup>3</sup>

**Q136 Mrs Moon:** If there was a sudden and rapid rise in risk—let us say, God forbid, during the Olympics—what measures have you got in place, not to wait till the next budget cycle or for an urgent operational requirement, but to deal with it there and then?

**Nick Harvey:** We would have to make swift changes to the way we deployed assets and reassign assets and personnel to different roles.

**Q137 Mrs Moon:** What are the areas of greatest vulnerability? Where are the risks? Where have you highlighted that we have particular areas of risks?

**Nick Harvey:** I will be guided by my colleagues, but I would not have thought that we were particularly minded to flag up in an open session where we thought we were vulnerable.

**Q138 Mrs Moon:** Have you clarified, for your own thinking, those greatest areas of vulnerability?

**Nick Harvey:** Yes.

**Q139 Mrs Moon:** Do you have mechanisms to monitor those and cover them should a risk arise?

**Nick Harvey:** Indeed. As I have described to you, we have quite mature and established risk management processes. They are looked at and refreshed regularly. The Defence Board takes a risk report regularly. If there were things moving up the risk table, as it were, in the relatively short term, those would come to our attention swiftly. If there are longer-term, more strategic things that are beginning to concern us, there are mechanisms in place to deal with those in a slightly slower time. I believe that there are processes there that can deal with both the immediate and the further out.

**Tom McKane:** The other point that is worth making, just to supplement what the Minister has said, is that risk management is something that imbues almost everything that the Department does, and so in relation to specific operations or specific activities, there will be an examination of the risks associated with that and a plan put in place to manage that, but clearly they are not risks that one would go into in public.

**Q140 Mrs Moon:** I am not asking you to go into an analysis of the risks in public; I am asking for confirmation and clarification that you are monitoring those risks—you have highlighted the areas at most vulnerable risk—and that you have capacity, if there were an escalation in that risk, to provide maritime surveillance cover. Is that a yes or a no?

**Nick Harvey:** Yes. We made it clear at the time that the other mechanisms by which the previous Government had decided on a temporary basis to try and mitigate this capability gap would be those we would continue to look to on an ongoing basis. As and when we have needed to deploy the other assets to plug this gap, the decisions have been taken in a timely fashion so to do.

**Q141 Mrs Moon:** To the Chair's first question, you acknowledged that Britain is a maritime nation, with a huge maritime economy vital to the success and prosperity of this nation. Would you agree that maritime surveillance should be a sovereign capability?

**Nick Harvey:** No, I do not think I would agree to such a sweeping statement. There is a great deal we can do in co-operation with our allies and partners. There is

<sup>2</sup> Ev 49

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a great deal that we do do in the way of co-operation and information sharing, and there are various new initiatives being undertaken in NATO and in the EU that would assist international co-operation in this field in the future. I would certainly accept that there will be elements that we want to keep sovereign, but the proposition that the whole piece must, of necessity, be sovereign is not an analysis I would share.<sup>4</sup>

**Q142 Mrs Moon:** So in what areas do you think the capability would better be distributed to and supported by allies? Have you clarified that?

**Nick Harvey:** We do a lot in co-operation with our allies already. This is a co-operative effort in which we work with several partners. To point to some obvious ones, the US, Canada and Norway are partners with whom we work all the time on this sort of piece. The idea that we—or, frankly, anybody—could afford to do this entirely on our own is one that I just do not think is realistic.

**Q143 Mrs Moon:** But since the SDSR and the decision to cancel the Nimrod MRA4, what additional arrangements with allies have been put in place to cover the capability gap? Have there been any new protocols or any new agreements?

**Nick Harvey:** We have understandings with other countries, most prominently the three I just mentioned—the US, Canada and Norway—and when it has been necessary for them to assist us with this, they have done so.

**Q144 Mrs Moon:** They were pre-existing agreements?

**Nick Harvey:** Yes.

**Q145 Mrs Moon:** There have been no additional agreements?

**Nick Harvey:** No additional agreements, because those in place work perfectly satisfactorily.

**Q146 Mrs Moon:** Part of maritime surveillance also includes long-range search and rescue. I believe that we relied on French and Irish search and rescue planes to provide cover when there was an incident in the Irish Sea. Was that something that we rapidly had to move to seek their help and support for?

**Air Vice-Marshal Green:** In the previous evidence session, when the Chief Coastguard gave evidence, he wrapped this sort of issue up very well. When something happens, it is effectively within his authority—the coastguard's authority—to start to react to that incident, and he will use whatever assets are available at the time and are nearest to the point of the concern in order to alleviate the situation or the risk. In that example, those assets were available. There is no reason to suspect that if a Nimrod had been available, it would have been able to react any faster to that particular incident than those that were actually closer to the incident in question.

**Q147 Mrs Moon:** We have a series of new agreements with the French. Has any attempt been

made to negotiate French support for our maritime patrol capability and surveillance?

**Tom McKane:** There is no specific new agreement under the UK-France defence treaty that addresses search and rescue, if that is your question.

**Q148 Mrs Moon:** And no conversation with Luxembourg, which has three MPA? It does not need them because it does not have a coast.

**Tom McKane:** Not that I am aware of.

**Q149 Thomas Docherty:** Why have there been no discussions with the French or, indeed, with Luxembourg?

**Air Vice-Marshal Green:** Long-range search and rescue is a responsibility that we have all signed up to through previous conventions. Consequently, it is the standard protocol that if you are in that region, you will react to that particular incident. There does not need to be a bilateral arrangement with a particularly nation to satisfy a search and rescue need; the arrangements are already in place within a broader arrangement.

**Sir Bob Russell:** Titanic. That was what they did then.

**Q150 Chair:** I do not think that that is the question. You mentioned ISTAR, which is intelligence, surveillance, target acquisition and reconnaissance. At the first evidence session, I think, you told us that our ISTAR capability had been skewed by Afghanistan and that, essentially, the funding for our ISTAR capability comes, presumably, from the Contingency Fund—net additional cost of military operations. Is that correct? Is that a fair summary of what you told us?

**Air Vice-Marshal Green:** I am not sure that I used the word “skewed”, Chairman.

**Q151 Chair:** “If we consider the second one first, Afghanistan has certainly skewed our investment”.

**Air Vice-Marshal Green:** Okay, maybe I did. You are right. The rest of the statement was correct and, indeed, the front part of it was clearly correct, too.

**Q152 Chair:** So we are withdrawing our combat capability from Afghanistan within the next three years. Presumably the net additional cost of military operations will also be withdrawn. Is that right?

**Air Vice-Marshal Green:** That's right. The net additional cost of military operations is exactly that. Unless there is another conflict that we are directed to go and support, the investment in some of the platforms that have provided us with an ISTAR capability—not all—in Afghanistan will be withdrawn. That is the baseline assumption. At the moment, what we are doing is looking at those specific platforms that provide us with ISTAR capability in Afghanistan and deciding whether it is wise for us to bring them into the core equipment programme. Clearly, there has been investment in them to date, and some of them have enduring capabilities. We will need to see where they fit into the overall priority mix for defence as we move

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forward. They are decisions that we do not need to make today; they are decisions for us in the future.<sup>5</sup>

**Q153 Chair:** Where will you get the money for that from?

**Air Vice-Marshal Green:** From the core programme.

**Q154 Chair:** So you will have to take that from somewhere else, will you?

**Air Vice-Marshal Green:** No. The Secretary of State has announced a core programme, which is fully funded. We talk about the urgent operational requirements and whether we bring them into core. They are all for consideration in the unallocated provision that the Secretary of State spoke about in his previous announcement. As we move forward, we must prioritise those equipments that are not part of the core programme, and the debate for us is in deciding where they fit on that priority list and which ones we are going to fund. Clearly, that will be done against risk that we are carrying in current ops, and our contingent ops.

**Q155 Chair:** So you have already begun to spend that extra contingency that the Secretary of State announced last week.

**Air Vice-Marshal Green:** No.

**Q156 Chair:** It sounds as though that is what you are doing.

**Air Vice-Marshal Green:** No. The first decision point for an investment decision is scheduled for around July. We will make only the decisions that we need to make at that time. If there is not a need to make a decision, or we do not have evidence to support it, we will move it to the right and pick it up some three months later.

**Nick Harvey:** The intention is to look at the items that are waiting to come into core programme, look at the resources available that the Secretary of State described last week—the uncommitted resources—and to have a single prioritising methodology. We intend quarterly to assign those funds as we go forward to some of the items sitting on the priority list.

**Tom McKane:** And the point that the Secretary of State made in his statement was that that money would be committed only at the point at which it needed to be committed in accordance with military advice at the time, and only if it could be demonstrated that it could be afforded—both the capital purchase and the support—over the 10 years of the programme.

**Q157 Chair:** What is the military advice in relation to this ISTAR capability? Do you think that, when we no longer have that net additional cost money coming in, there will be an ISTAR vulnerability unless money is spent on it?

**Air Vice-Marshal Green:** There is a planning assumption at the moment that we will allocate some of that unallocated provision, which is sufficiently

high up the priority order as we sit here today, to ISTAR capability.<sup>6</sup>

**Q158 Thomas Docherty:** When the Secretary of State gave his statement on Afghanistan, I asked him what our air commitments to Afghanistan would be beyond 2014, and he indicated that that is something that is currently being considered and that no decisions have been made. Can I draw from that that we are considering extending ISTAR beyond 2014 in Afghanistan?

**Tom McKane:** No decisions have been taken by the Government beyond those that have been announced, which are that the Government will provide financial support to the Afghan national security forces amounting to £70 million a year from the middle of the decade and that we will fund the Afghan national officer training academy and provide personnel for that academy. Consideration of what else we will do has still to be completed.

**Q159 Thomas Docherty:** The Minister will tell you that I am a bit slow on the uptake. Just so I am clear, we haven't ruled out continuing ISTAR in Afghanistan beyond 2014?

**Tom McKane:** That has not been ruled out.

**Q160 Chair:** We understand that no decision has been taken.

**Tom McKane:** Correct.

**Q161 Chair:** But it has not been ruled out, so consideration is being given to it.

**Tom McKane:** But there will be no combat role for the Armed Forces beyond the end of 2014.

**Q162 Chair:** That is understood.

We know that there is going to be no funding for a new maritime patrol aircraft or for a replacement of the Type 22 ships before 2015. I think that is a fair assumption.

**Nick Harvey:** Yes.

**Q163 Chair:** We know that there is a seedcorn initiative to keep those capabilities by asking for the help of other nations to use and train our aircrews, for example, in some of these maritime surveillance techniques. Is that correct?

**Air Vice-Marshal Green:** Correct.

**Q164 Chair:** Will that seedcorn initiative expire in around 2019?

**Nick Harvey:** It is currently planned out to 2019, but it doesn't necessarily follow that it will end in 2019. That is just as far ahead as we have planned.

**Q165 Chair:** I see. So it is possible that that seedcorn initiative will be extended further than 2019?

**Nick Harvey:** I would say that the 2015 SDSR seems to me to be highly likely to come back to look at this issue. It is much too early to anticipate what decisions will be reached. I could imagine circumstances in which they might take certain decisions, but a further

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series of decisions would be needed in 2020. I would certainly think it is well within the realms of possibility that the seedcorn initiative will be sustained through to a point where a 2020 SDSR takes decisions in this field.

**Q166 Chair:** Do you think it is possible that it will be sustainable until then?

**Nick Harvey:** Yes.

**Q167 Chair:** Okay.

NATO has a smart defence initiative in relation to maritime patrol aircraft. Are we thinking of being involved at all in that?

**Nick Harvey:** We are. We are supporting the Tier 2 NATO smart defence proposal, which is being taken forward through an investigation led by Canada, under the auspices of the NATO Naval Armaments Group, to provide a long-term solution by means of maritime patrol aircraft procurement. The solution at this stage is not determined, but one option would be to have some sort of shared NATO capability, perhaps akin to the AWACS model. An approach of that sort would provide a multinational procurement option delivering economies of scale, so we are certainly interested in that.

**Q168 Chair:** What is the time scale of that?

**Tom McKane:** It is looking at a longer-term solution, so it is not something that would come to fruition in the next year or so; it would be a longer-term project. As to exactly when the study work will complete, I do not know.

**Q169 Chair:** So it is something that the Government is actively considering, and we are considering taking part in that smart defence initiative?

**Nick Harvey:** Yes.<sup>7</sup>

**Q170 Chair:** So when the Scottish National party says: “However it was put on record in a recent PQ that the UK is, ‘not currently planning on participating in this project’”, is that incorrect?

**Nick Harvey:** There is more than one NATO initiative, which it might be worth teasing out. We are not participating in another Tier 1 NATO smart defence project in this area led by Germany that is looking at options to share and pool existing maritime patrol aircraft assets. Because we do not have any, we are not part of that. It is, to be charitable, just conceivable that the Scottish nationalists might have been referring to that.<sup>8</sup>

**Chair:** I see. That is a helpful clarification.

**Q171 Mrs Moon:** I just want to take us back to the gamble and risk issue. How much are we adding to our present security, and how confident can the British public feel about our present maritime surveillance capability, when we are spending £2.4 million a year on keeping personnel flying in Canada, New Zealand, Australia and the United States but not around the British coast?

**Nick Harvey:** I think the British public understand that a Government Ministry will make a decision that they think that an acceptable level of risk exists in the short to medium term, but while considering the longer-term picture we would want to keep options open. In a sense, it is exactly the same as the risk we are taking in terms of Carrier Strike. We took a calculated risk that we thought this was something we could gap for a few years, but that in the longer run we thought we would need to come back into this. On maritime patrol surveillance we believe we are carrying an acceptable degree of risk in the short to medium term, but we have not, as yet, taken a view that we would not want to come back into this in the slightly longer term. I think the public would understand that, and would understand that it is a perfectly rational use of quite limited resources to be sustaining that expertise as a national asset to us that we might wish to make use of in the future.

**Q172 Chair:** How exactly is the seedcorn initiative going to work? We are sending our pilots abroad to fly different aeroplanes, under different regulations, on different ships—

**Air Vice-Marshal Green:** In different aircraft, not ships. These are maritime patrol, so they are not actually on ships.

**Chair:** You are right. We will come on to that aspect of it later on.

**Air Vice-Marshal Green:** No doubt. Shall I explain?

**Chair:** Please do.

**Air Vice-Marshal Green:** This is a similar programme to the ones that we have with many other nations where we do exchange officer postings or loan service, and where we put people with expertise into other nations’ air forces, navies and armies. This is merely an extension. For instance, the mission systems that were part of the US programme are very similar to the one that was in the MPA. In fact, our UK nationals who are part of that programme are leading the field in terms of expertise and qualifications on that programme. I would not underestimate the influence that that buys. When we are talking about depending on our coalition partners to de-risk future contingencies, having our people within those forces is a significant de-risking factor. We can influence their thinking and how they operate and it is a model that we share right across the spectrum of defence.

**Q173 Chair:** And it will have to continue way beyond 2020, will it not, if we are going to be realistic.

**Air Vice-Marshal Green:** It depends on the decisions made. At the moment, it is a funding assumption until that time and we think that it is very low risk maintaining it until that time. As we get to SDSR 2015, as the Minister said, and we shape our way forward, we will relook at that initiative on the back of what has happened with NATO’s smart initiatives and so on to see where we need to go. We have the ultimate flexibility in shaping that as we move forward.

**Nick Harvey:** It is also the case, Chairman—I can see what you are getting at about different aircraft types,

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for example—that as well as the flying skills, what are being sustained are the analytical skills and the intellectual firepower to make use of the sort of information that these operations elicit.

**Q174 Mrs Moon:** I am just intrigued, Air Vice-Marshal Green, that you talk about de-risking our relationships with other nations and building up influence in those nations and so on. I wonder what level of risk you see us having with New Zealand, Australia, Canada and the United States. That is where we have our pilots—20 of them—over the next five years. How on earth are we going to improve our security by having 20 pilots over five years flying with those air forces?

**Tom McKane:** I do not think that it is so much a question of de-risking the relationship with those countries; it is a question of, if you like, thickening the relationship with those countries through these kinds of exchanges. Also, these happen to be countries that operate the relevant type of aircraft where the seedcorn can be maintained.

**Nick Harvey:** And it is certainly the case with the US and Canada that these are two of the nations that we look to first to help us with any problems that our capability gap presents.

**Q175 Sir Bob Russell:** Minister, I am a great fan of unmanned aerial vehicles, so do you see the current capability gap as an opportunity to explore alternatives, such as UAVs?

**Nick Harvey:** I certainly do. I think that it is an inherent part of the MoD's capability processes that we can consider a range of solutions to any capability requirement. That is the reason why the study that we discussed in the earlier part of the meeting and which the Air Vice-Marshal described has been looking at this in the broadest possible sense. So yes, I think that you are right that the possibility of unmanned aerial systems playing a part in this in future is a real one.

**Q176 Sir Bob Russell:** The Secretary of State announced a week or two back the miracle of the MoD budget being balanced after only two years, which is an incredible achievement that we all rejoice in. Even allowing for the tight budgetary controls, what are your priorities in terms of investigating how to fill the gap?

**Nick Harvey:** As we have described, the 2015 National Security Strategy and SDSR will have to make a further analysis of the threat posed here and the gap that we are taking. By that stage, we will perhaps have a clearer picture of the resources that will be available going forward. The prioritisation across defence—across the three Services and the different operating environments—will be ranked at that time in the SDSR process. And then, with annual budget cycles thereafter, there will be further refinement, according to the current reading of the picture.

**Q177 Sir Bob Russell:** How important is it—indeed, is it important—that the maritime surveillance assets also have an attack prosecution capability?

**Nick Harvey:** I do not think that it is essential that the attack capability has to come from exactly the same platforms. It wouldn't be a bad idea, because it would make things faster, but I don't think it's an absolutely essential prerequisite that it must.

**Q178 Sir Bob Russell:** Going back to UAVs, we have heard in evidence that there are a number of UAV programmes being considered, but there are not many that could operate in a STOVL—short take-off and vertical landing—capacity; I understand that not everybody knows what initials and the pronunciation of them means.

**Nick Harvey:** The point to tease out here is that if you are talking in the future perhaps about an unmanned combat system that you were seeking to fly off an aircraft carrier with a weapons payload on board, that is a different picture altogether from trying to fly an unmanned system off an aircraft carrier for the purposes of surveillance, with comparatively much lighter equipment on board it. I do not believe it will be difficult to use the carriers without cats and traps on them for surveillance. I acknowledge it would be a rather different picture for aircraft with a weapons payload.

**Q179 Sir Bob Russell:** I want to pursue that, Minister, because you have almost answered my next question. Given the recent announcement on the new carriers, to which you have just alluded, what are the implications for the use of UAVs in a maritime surveillance role then?

**Nick Harvey:** It will be possible, I believe, to do so. This is still a fairly new area of technological development, but certainly there are options being developed elsewhere that you could fly off an aircraft carrier without needing catapults.

I do not know if the Air Vice-Marshal wants to add to that.

**Air Vice-Marshal Green:** No. The only thing I would add is that we are looking potentially at a concept demonstration programme later on this year, which would be flown off the back of a frigate.

**Q180 Sir Bob Russell:** Off the back of a frigate?

**Air Vice-Marshal Green:** Correct. So that is actually fired off a rail, flies around for some 14 hours and is then recaptured back to the vessel.

**Q181 Sir Bob Russell:** Perhaps we should be building more frigates and fewer aircraft carriers then.

**Air Vice-Marshal Green:** My point is that you don't necessarily need a runway, a catapult and arrestor wire to fly UAVs off maritime vessels.

**Q182 Sir Bob Russell:** Minister, going back to your answer just prior to the Air Vice-Marshal's one, are you saying that the decision will have to be revisited in the longer term and, if so, when might that longer term be?

**Nick Harvey:** I think this is something that will be kept under constant review. The first opportunity, I think, for a fundamental look at it will be in the 2015 SDSR. If that identifies a certain way forward, then, as the Air Vice-Marshal has said, there will need to

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be further work, developing whatever options seem to be the most attractive at that time, and of course keeping a watchful eye, for example, on the NATO initiative that we have all also described.

The system now is that we have set in place five-yearly strategic reviews, and then we have the annual budget cycle each year in between, which is capable of taking into account current developments in between the five-yearly strategic looks. So I think there is a working methodology there that will offer us the opportunity to come back to this again and again, but I would expect the next fundamental appraisal of it to be in the 2015 SDSR.

**Q183 Sir Bob Russell:** Coming back again and again. This could be the last question from me: Minister, when will the carriers have an effective maritime surveillance capability?

**Nick Harvey:** I think that you are making an assumption that this is something that we will do off carriers. I think that there is a good chance that we might, but you would be talking certainly into the next decade.

**Q184 Thomas Docherty:** Minister, you had the same thoughtful look on your face in response to Sir Bob's question about UAVs as you had last week when the Chairman asked you about components in cyber-security. Can you confirm whether during the decision to turn the carrier decision around active consideration was given to the impact on the potential for UAVs' usage for maritime surveillance?

**Nick Harvey:** It certainly is the case that the implication of the recent decision for the future use of unmanned aerial systems was given deep consideration. That was an important part of the work. Rather for the reasons that the Air Vice-Marshal was just setting out, that cats and traps are not thought essential to the use of UAVs for maritime surveillance, I could not say that that was a major part of the consideration. But the future use of unmanned aerial systems more broadly was certainly something that was taken into consideration.

**Q185 Thomas Docherty:** So again, because I am probably slow on the uptake, one of the Ministers in the discussions asked the Services, "Does this have any impact on UAVs, on maritime surveillance from carriers, if we change from cats and traps?"

**Nick Harvey:** I do not think that the maritime surveillance aspect of this was a big issue at all, but the use—

**Q186 Chair:** Should it not have been?

**Nick Harvey:** No, because I think that it is possible to do it anyway. But I think that the future use of unmanned aerial systems in other roles was—

**Q187 Thomas Docherty:** Off the carrier.

**Nick Harvey:** Off the carriers—I beg your pardon, yes. That use was indeed addressed as part of the decision.<sup>9</sup>

**Q188 Penny Mordaunt:** I have a very quick question. Clearly, the decision on the carriers was a judgment about not having that gap in capability cost plus a two-carrier option versus the whole future-proofing debate.

**Nick Harvey:** Yes, absolutely.

**Q189 Penny Mordaunt:** I am slightly encouraged by what you say about the surveillance side of things. Looking to the next SDSR, because it is still not clear whether we are going to have two operational carriers, would you say that if we ended up with one carrier that was not future-proofed, that would be the worst—**Nick Harvey:** Future-proofed in what sense?

**Penny Mordaunt:** As in not having cats and traps. So, if you ended up with one carrier, in effect you would have lost the plus of the two-carrier option and that all-year-round capability. If you had lost that plus side, and you had got just limited capability for part of the year but with none of the upside that there would have been with retaining cats and traps, would you say that that was the worst option—the worst of all worlds?

**Nick Harvey:** That is not a decision that has been taken, and I do not think that it is one that you should assume will be taken. I believe that by the time two aircraft carriers have been built, and that massive capital outlay has been expended, any Government carrying out an SDSR in 2015 is going to feel considerable pressure to ensure that they are used.

**Q190 Penny Mordaunt:** So, it would be surprising, given the closeness of the next SDSR and the decisions that have been made about the carrier options at the moment, if it were decided at the next review that two carriers were not going to be there.

**Nick Harvey:** The next SDSR is three years away. I cannot at this stage make any accurate forecast about the sort of security analysis that will underpin it, let alone about the financial climate that will hang over it. So, I do not feel in a position to say what would or would not be surprising. However, I do think, as I said a second ago, that there will be a pressure on the Government at that time whatever their colour.

**Chair:** What we would really like you to say is, "Yes, of course we need two carriers. It would be ridiculous to have just one." We accept that that may not be the appropriate question to ask for the subject matter of the inquiry today.

**Q191 Thomas Docherty:** I am really confused, because I thought that the Secretary of State specifically said that the reason for dumping the cats and traps was that it gave us all year round—because we could not afford putting them on two.

**Nick Harvey:** I believe that the Secretary of State said that he had opened up the possibility of being able to use the two hulls in a way that ensured you always had one in active use, and that that was a decision that a future SDSR would be able to take.

**Q192 Thomas Docherty:** Turning to the issue of inter-departmental jointery, to what extent do the requirements of other Government Departments—DfT, DEFRA and so on—and Government agencies

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and the need for home water surveillance drive your thinking?

**Nick Harvey:** It is certainly right to say that other Government Departments do have material interests here. The UK Border Agency, the Marine Management Organisation for fisheries and the Maritime and Coastguard Agency all have an active interest in this. They perform their own patrols with surface vessels and have contracts for aircraft surveillance. I believe that there is scope in the future for all these things to be done together and where the MoD might get to play a part in that. Certainly, there is an improved co-ordination now across Government. There is a maritime security oversight group, which is led by the Home Office, that meets regularly at an official level. There is an opportunity now, looking ahead, to get a much more co-ordinated picture across these different branches of Government and I would hope in the fullness of time to see that happen.

**Q193 Thomas Docherty:** I will come back to representations and what that might do in a second. Following up on the point about inter-departmental jointery, can you clarify at a ministerial level how it works? That sounded to me like it was civil servants.

**Nick Harvey:** Yes, there is a sort of informal network of Ministers under James Brokenshire that look at these things as well. He has the lead responsibility for that, but as this work goes forward and the officials begin to distil options and explore the scope for co-operation, Ministers will come together to look at the work they are producing.

**Q194 Thomas Docherty:** If, as you go forward with this group, representations were made by another Government Department or agency to change the MoD's posture on maritime surveillance, for whatever reason, would you as a Government consider it?

**Nick Harvey:** You are inviting me to speculate. The honest answer is that I cannot really see circumstances in which the requirements of those other Government Departments would lever the MoD against its judgment as to the military requirement into providing a service that it did not otherwise think that it needed to provide. However, if the MoD was moving to a position where it was looking at expanding what it does in this area and if the opportunity to co-operate with other Government Departments to avoid duplication, to multitask and to get better value for taxpayers' money was to present itself, I could imagine it happening.

**Q195 Thomas Docherty:** If there were to be a debate, would you see this informal group of Ministers under the Home Office as being the right forum for taking that debate forward?

**Nick Harvey:** For taking it forward, yes. I would have thought that, ultimately, decisions would be taken by the Cabinet and/or the National Security Council, but I would certainly have thought that—to use your precise phrase, taking the debate forward—as officials were coming up with options and possibilities, that ministerial group would look at those initially, and

then I would expect decisions to be taken at Cabinet or NSC level.<sup>10</sup>

**Q196 Thomas Docherty:** Turning to the issue of the National Maritime Information Centre, do you think that it and the Maritime Security Oversight Group are sufficiently visible at ministerial level?

**Nick Harvey:** I think they are visible at ministerial level. I wonder quite what you are getting at.

**Q197 Thomas Docherty:** Do you think that the work they are doing is fully understood—obviously, you are familiar with it—by, for example, this informal club of Ministers?

**Nick Harvey:** I think there is a reasonable level of awareness at ministerial level. I, for example, speak from time to time to DEFRA Ministers about the fisheries patrols and so on. There is a greater awareness, perhaps, among Ministers in different Departments about what is going on. I have talked to Ministers of Transport as well. I think I may have undersold to you the extent to which Ministers already co-operate and work together on this. There is a visibility of these issues among Ministers in different Departments.

**Q198 Thomas Docherty:** And to the wider world? Do you think people are sufficiently aware of the work of NMIC?

**Nick Harvey:** The NMIC gathers information. It collates the clearest possible picture from what sources of information are available to it, some of it covert, and that information is then available to inform decision makers. I think that that is actually working extremely well and that that is a real resource now to the Government, to Ministers, and to future Governments and future Ministers to take the decisions they need to take.

**Q199 Thomas Docherty:** On the issue of decision making versus information gathering, do you think there is a case for NMIC taking decisions rather than just gathering information?

**Nick Harvey:** That would be a big step, I think. If they were to move from what they are doing now into a sort of command and control function for the whole of Government, that would be almost unique in terms of the way Government operates. I am not sure I am convinced by that. Individual Departments retain responsibility and individual agencies do form different parts of the work. It is entirely right that we try and get as common an understanding as we possibly can of the threats and the challenges, but I think that the need for the constituent Departments and agencies to retain their responsibilities would be likely to override pooling of the decision making.

**Q200 Thomas Docherty:** Mrs Moon touched on the Olympics this summer, and there is the Jubilee as well. Are you content that the MoD's contribution to interdepartmental co-operation is robust enough and that we are prepared enough to deal with possible maritime surveillance challenges and threats during this rather busy summer?

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**Nick Harvey:** Yes, absolutely. Our contribution to Olympics security is very substantial. We are entirely plugged into all the decision-making apparatus and forums for dealing with Olympics security. It is certainly the case that if anything unexpected should happen that is not within the scope of the contingency planning that we have so far undertaken, we have the necessary authorities to divert capabilities into the task at very short notice.

**Q201 Thomas Docherty:** Out of interest, from where would you divert those capabilities, given that we are stretched slightly?

**Nick Harvey:** Yes, we are stretched, but if there were a very short-term requirement—I assume that you are still talking broadly about the subject matter of the inquiry—it would be perfectly possible at short notice and for a short time to redeploy assets to perform these functions.

**Q202 Thomas Docherty:** From where?

**Nick Harvey:** It depends on what you need.

**Air Vice-Marshal Green:** If you look at the existing capability that the SKASaC provides, it is a very competent maritime surveillance platform, which from the east side of London can look well into Europe with its radar. So there is a very limited risk from a lack of maritime surveillance in the Olympic operation.

**Q203 Mrs Moon:** Listening to the three of you, I am confused about the picture that you are trying to paint. Can you clarify how you see it? Are we playing with increased risk and gambling? Do we have a reduced capability that we are trying to cover by constantly diverting platforms from here to there, leaving other areas unprotected as we do so, or is it that we don't need it? We can live without it. We do not need maritime patrol capability. We could save over £3 billion, which is what Nimrod MRA4 cost, and the UK would be perfectly safe and secure without that capability. We seem to flow backwards and forwards between those two positions. Which is it?

**Nick Harvey:** We have been managing without this for two years, because the capability gap started on 1 April 2010. The previous Government indicated to Parliament the means by which they would aim to cover those gaps as and when the need arose. Two years on, I would say that the extent to which we have had to re-task those other assets to cover the acknowledged gap has not been excessive. It has not left us struggling to cover the tasks that those other assets perform.

As we look further into the future, if we thought that the security challenge were greater, it would become difficult to keep doing that by these means, which is why we are keen to sustain for the longer term options to recreate a dedicated capability for this task. But at the moment, the contingency that the previous Government flagged up—diverting other assets as and when necessary—has proved adequate to the task and has not put an intolerable strain upon it.

**Q204 Mrs Moon:** So, a bit like a household, we can do without a burglar alarm and manage the risk. Is that what you are saying?

**Nick Harvey:** We are managing the capability gap quite well at the moment. The degree of risk that we are carrying is tolerable, but in future, if the security assessment were to deteriorate and we thought that there were greater risks, we would need to come back into this with a dedicated capability. At the moment, although this was not something we would have wanted to do, we assessed in 2010 that it was the least bad option. So far, it has not proved an unmanageable challenge to cover the capability gap.

**Q205 Mrs Moon:** If the capability gap were such that you felt, "Right, we really do need to replace this capability," how quickly could you do that?

**Nick Harvey:** It would require the security assessment to deteriorate very quickly for us to need to consider an urgent replacement of the capability. It seems to me much more likely that the security picture, were it to deteriorate, would do so gradually, and the next opportunity for the Government to make a fundamental assessment of this will be presented by the 2015 SDSR. It is in order to give the Government of 2015 the option of getting itself back into this that the seedcorn initiative was started.

**Q206 Mrs Moon:** Again, if in 2015 you decided, "Yes, we urgently need to get back into this," how soon could you purchase and replace the capability? We have the pilots and the crews, but how would you get the platforms and how quickly could you do it?

**Nick Harvey:** If it was decided at 2015 or some other point that there was an urgent need to get back into the business, there are options out there that other countries use. We have shown in the urgent operational requirement process which purchased equipment for Afghanistan that when it needs to, procurement can work very quickly. It might not be the optimal solution for the long term, but in your scenario of an urgent requirement I think we would be capable of getting something going again—I hesitate to be drawn. Air Vice-Marshal, what would you think was realistic?

**Air Vice-Marshal Green:** I think it is such an open-ended question, because it completely depends on what we decide the risk is. If we are talking about replacing a platform as complex as the Nimrod, that would be quite a long time. If you are looking at a maritime surveillance platform, arguably that is a less complex platform and it can be done relatively easily because they are, effectively, on-the-shelf purchasing. Again, it is a difficult question. Indeed, you can start thinking about leasing options, which we have done with C-17s. It does depend on what the capability is.

**Q207 Mrs Moon:** Are we looking at that now, or are we going to avoid that issue until 2015?

**Nick Harvey:** We are not looking at that issue now, because we do not perceive any urgent need to do so.

**Q208 Mrs Moon:** So in 2015 we could move forward into another five years of thinking, cogitating,

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planning and weighing before we move back into this capability?

**Air Vice-Marshal Green:** The route we would follow is that SDSR 2015 would establish whether there was a requirement for us to fill. Let us assume that it did. The next action would be effectively to examine what the options are to fill that requirement, which would mean that we would generate a business case. We would look through and cost each of the different options and we would examine leasing, buying off the shelf and developing new platforms ourselves. We would present to the Government the appropriate option for them to consider, which generates best value for money and provides the answer to the capability. Depending on what requirement I am trying to solve, it could be an off-the-shelf purchase because it has already been built; it could be the development of an existing capability, which would take a bit longer; or it could be building something entirely new that nobody else has envisaged, which would involve a long development programme.

**Q209 Mrs Moon:** Like the A4?

**Air Vice-Marshal Green:** The MRA4?

**Mrs Moon:** Yes.

**Air Vice-Marshal Green:** Correct.

**Q210 Mrs Moon:** Ten years.

**Air Vice-Marshal Green:** Yes. So, are we likely to get into that game? Mark Green's opinion is, "I don't think so." Quite where else we are in that spectrum—I cannot provide you with a concrete answer, because we have not got a requirement that we are trying to answer, to answer your question.

**Q211 Mrs Moon:** Have you had discussions with the maritime insurance industry and with the maritime companies—the commercial fleets—and what is their view of our lack of capability and our lack of capacity? How concerned are they?

**Nick Harvey:** We are still providing the sort of cover that they would be interested in and concerned about. We are doing it in a different way, but they have not flagged up to us any grave concerns about the current arrangement. Slightly to take that question with what you were getting at in your previous one, the Ministry of Defence does not take the view that the risk that we are carrying through this capability gap is intolerable. It is regrettable, but our assessment in 2010 was that it is a tolerable level of risk to be taking. I have described to you that we do not feel that covering the capability gap is proving unmanageable. While I think that it is highly unlikely that a Government of any political colour would want to go down the route, once again, of devising a complex, but uniquely British solution, I think that we would be well capable of putting together something perfectly adequate in this area, at relatively short notice, if the security assessment or representations from any other quarter led us to the conclusion that we needed to do that.

**Q212 Mrs Moon:** Minister, I have to ask why it is essential that we withhold the information in the report—sorry, I forget the acronym—

**Chair:** WAMUS.

**Mrs Moon:** As "its disclosure would, or would be likely to prejudice the capability, effectiveness or security of the Armed Forces." If it is so bland, why does it have to remain secret?

**Air Vice-Marshal Green:** Because it is actually pointing to a specific capability in the underwater space. It is not a broader maritime space; it is underwater. Effectively publishing our risk assessment in that area would compromise our security.

**Q213 Chair:** Work on the next SDSR has already begun, has it not? We heard that from the Secretary of State last week.

**Nick Harvey:** The work that is now taking place in the Department will essentially start forming the basis—the work streams—that will inform the next SDSR process. I would not say that we have started yet anything comparable to the 40 or 41 specific work streams that contributed to the 2010 SDSR, but a number of quite fundamental pieces of work are now taking place in the Department that will, as the Secretary of State was getting at, be some of the building blocks of the 2015 consideration.

**Q214 Chair:** Will there be a work stream relating to maritime surveillance?

**Nick Harvey:** There will be a maritime stream, but whether or not there will be one specifically about surveillance—

**Air Vice-Marshal Green:** There certainly will be a work strand that relates to our future ISTAR capabilities. That will be led through my post, which, at that point, will be lodged within the Joint Forces Command. We have already discussed ownership of the issue, as part of our broader transformation, and where that issue will sit. The commander of the joint forces will be the defence authority for information. It fits within his portfolio extremely well. He looks across all environments—land, air and maritime—and it is part of that debate. The work that we have done since the SDSR, with the WAMUS study and with seedcorn, allows us to provide the right intellectual horsepower for that debate to ensure it is kept live as a component within the overall ISTAR capabilities.

**Q215 Thomas Docherty:** Minister, in response to Mrs Moon's questions, you said with some confidence that we could regenerate relatively quickly. I am puzzled, given that the Air Vice-Marshal has said that no work was done in the 2010 SDSR on how long we would be without—I am not sure when a gap stops being a gap and becomes non-existent—and given that no work will be done before 2015 on looking at how long it will take to regenerate, how can you be so confident that you can do it quickly?

**Nick Harvey:** The capabilities that Nimrod would have provided, if it had successfully been brought into service, would have been very sophisticated. What the Air Vice-Marshal was saying, and what I meant when I said we could get back into this quickly if we needed to, was that getting some surveillance equipment of adequate calibre to perform the basic function into an aircraft with sufficient endurance to patrol the space

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we need to cover, is not in and of itself a phenomenally difficult challenge.

If, at relatively short notice, we thought that we needed to get back into having a dedicated capability we could put something together or buy something off the shelf pretty quickly. Would it be of comparable complexity to Nimrod? No. Would it be capable of performing a maritime surveillance function because we perceived the need to get back into that urgently? I think it would.

There are options out there that would be available if we needed to move quickly. In terms of the quality and sophistication of what we got, it would probably be better to wait and see what became, for example, of the Canadian-led NATO initiative, to see what sort of progress was made with unmanned systems. That holds out the opportunity of getting back into this in

a highly capable and sophisticated way. The question put to me was whether if we needed to get back into this urgently, we could do so. I am reasonably confident in saying yes, we could.

**Q216 Thomas Docherty:** Would you anticipate that a quick—not rushed—purchase would be expensive?

**Nick Harvey:** Some of the urgent operational requirement purchases for Afghanistan have compared rather favourably with some of the MoD's other procurements. While I would not necessarily claim that they would be cheap, the experience of UORs is that they are quite good value for money.

**Chair:** Thank you to all three of you for your evidence in this session. It has been helpful and sometimes illuminating. We are most grateful.

# Written evidence

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## Written evidence from the Ministry of Defence

*Asterisks denote that part of the written evidence which, for security reasons, has not been reported at the request of the Ministry of Defence and with the agreement of the Committee.*

### INTRODUCTION

1. *General description of the current position on maritime surveillance, including setting out the current primary strategic role(s) and secondary role(s) for UK Armed Forces' maritime surveillance capabilities*

1.1 Maritime Surveillance is defined by NATO Allied Joint Doctrine as “the systematic observation of surface and sub-surface sea areas by all available and practicable means primarily for the purpose of locating, identifying, and determining the movements of ships, submarines, and other vehicles, friendly and enemy, proceeding on or under the surface of the world’s seas and oceans”.<sup>1</sup> Maritime Surveillance therefore refers to surveillance of the sea and from the sea and extends overland (eg in the littoral), and encompasses a spectrum of capabilities, including ships, submarines, aircraft and space and sea-bed based capabilities. Required characteristics of surveillance include timeliness, accuracy, survivability, reliability, suitability, standardisation, discrimination, covertness and continued coverage over wide areas

1.2 The UK MOD’s maritime surveillance capabilities are delivered by a wide range of platforms and assets; for example, every RN vessel at sea carries out maritime surveillance routinely and continually. For the purposes of this inquiry, we have chosen to focus mainly on those equipments and units for which surveillance is part of their primary role.

1.3 Many technical and operational details of these platforms are only available at a level of classification above secret, but we have sought to address the Committee’s questions as far as possible without relying on such information.

1.4 The role of British maritime power is to support the government in promoting and protecting the national interest. To focus military activity, the strategic objectives set out in the National Security Strategy were developed into seven military tasks in the 2010 Strategic Defence and Security Review. Britain’s maritime forces contribute directly to all seven of these military tasks—and by extension their role in maritime surveillance—including playing a key role in delivering the first three tasks which are nondiscretionary (see answer to question 2 below for more details on the seven military tasks). Maritime Surveillance, and the dissemination of the product of that surveillance, leads to shared situational awareness<sup>2</sup> which is a core enabling function for Force Protection and for all operations, including Military Tasks, conducted on, from, or adjacent to the sea. There is an intrinsic link between maritime surveillance and force protection.

1.5 It should be noted that maritime surveillance of UK Maritime areas and Maritime Borders, the coastline, inland waterways, the Territorial Waters (TW) and Fishery Conservation Zone (FCZ) (soon to be Exclusive Economic Zone (EEZ)) is primarily the responsibility of the Civil Authorities. However, Defence provides a contribution through MOD Offshore Patrol Vessels (OPV), the Fleet Ready Escort (FRE), the Maritime Counter Terrorism (MCT) contingent and any other assets which may be at sea.

### DECISION MAKING PROCESS

2. *How does the MoD decide the strategic requirements for UK Armed Forces' maritime surveillance capabilities?*

Description of methodology and tools used to assess the strategic requirements for maritime surveillance capabilities, including role of National Security Council and other bodies and contribution of the National Security Strategy.

2.1 The strategic requirements for the UK’s military maritime surveillance capabilities are set out in Defence Strategic Direction. They are modified over time through analysis conducted against certain operational scenarios—called the “Future Force Development Process”—which may lead to changes to the agreed force structure. The capability branches of the MOD also complete a yearly “Capability Audit”, which results in a plan for how Defence Capabilities (including Maritime Surveillance) will be provided in the future as part of an agreed Capability Management Strategy. This process delivers a detailed understanding of the military war fighting capability for overseas operations and for the military dimension of the security of the UK and its dependent territories, including protection of the deterrent and the collection of strategic Intelligence.

2.2 In parallel to these defence-specific processes, and as a result of the annual update to the 2008 National Security Strategy, the Cabinet Office-led Maritime Security Review made two clear recommendations which were agreed in January 2010 by the Ministerial Cabinet Committee National Security, International Relations and Development (Protective Security and Resilience) (NSID (PSR)).

<sup>1</sup> AAP 06—NATO Glossary of Terms

<sup>2</sup> Situational Awareness is the understanding of the operational environment in the context of a commander’s mission. Shared Situational Awareness is the ability to convey this to other commanders, platforms and allies.

- Strengthened strategic oversight of Maritime Security through a set of strategic objectives and changes to the central oversight of strategic policy mechanisms.
- Improved Situational Awareness for Maritime Security through the establishment of a new national multi-agency National Maritime Information Centre (NMIC) at Northwood to address current vulnerabilities.

#### Strengthened Strategic Oversight

2.3 The Maritime Security and Oversight Group (MSOG), established in 2010, is made up of key representatives of core departments, agencies and the Cabinet Office, and is the senior-level decision making group for maritime issues. The group provides strategic oversight and direction of all cross-cutting maritime security issues and programmes, including aspects of maritime surveillance. The group is responsible for the Maritime Security vision, strategic objectives and risks, reviewing them as circumstances require, and allocating priorities in order to use a framework to drive and coordinate day-to-day policy on cross government programmes of work.

2.4 In November 2011 MSOG directed the development of a cross government National Strategy for Maritime Security (NSMS).<sup>3</sup> The strategy will set coherent, resource aware, and pragmatic objectives and actions, with maritime surveillance a key tenet. From a maritime surveillance perspective, the strategy aims to achieve greater coordination of homeland aerial maritime surveillance requirements; and fully utilise NMIC to co-ordinate an integrated maritime surveillance and interdiction capability through well-defined coordinated protocols between the key stakeholders in response to threats.

#### The National Maritime Information Centre (NMIC)

2.5 The SDSR acknowledged that no single department or body had the capacity or capability to deliver what is required to monitor the maritime environment and counter threats the UK faces both in territorial waters and internationally. The NMIC was established in Northwood on 1 April 2011 to ensure information was disseminated, analysed and acted upon in a coordinated manner. NMIC is staffed from the Maritime & Coastguard Agency (MCGA); MOD (Navy); DEFRA (Marine Management Organisation (MMO)); UK Border Force (UKBF); Law Enforcement and Security Agencies (SOCA, ACPO, MPS); and the FCO.

2.6 The NMIC has created a powerful multi-agency environment bringing together the key agencies responsible for maritime safety, security and environmental protection in one location and developing a single picture of maritime activity similar to that used by air traffic controllers. This means that threats and risks can be identified and countered at an earlier stage. Although still in its early stages of development, the NMIC has already achieved significant benefits for the UK by fostering greater co-ordination between Government agencies and departments on issues ranging from counter terrorism to the protection of critical energy supply chains; and Letters of Understandings (LOUs) signed with the USA, France and signatory to the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against ships in Asia (ReCAAP). Provision has been made for reporting directly to Cabinet Office Briefing Room (COBR) in the event of crisis.

#### Risk Awareness in the Maritime Domain

2.7 A cross-government Maritime Risk Register (Secret) is maintained by the Cabinet Office and is subordinate to and coherent with the National Security Risk Assessment (NSRA).

#### *How do the strategic assessments of maritime surveillance requirements translate into decisions on capabilities, assets and platforms?*

2.8 The National Security Risk Assessment provided the basis for the National Security Council to take decisions about the relative importance of different national security capabilities, and choose where to focus new investment. The NSC produces a set of eight National Security Tasks and the contribution of the Armed Forces is then defined through the seven Military tasks (MT) which describe what the Government may ask the Armed Forces to undertake.

What Defence *must* do:

MT 1: Providing Strategic Intelligence.

MT 2: Providing Nuclear Deterrence.

MT 3: Defending the UK and Overseas Territories.

MT 4: Supporting civil emergency organisations in times of crisis.

*MT 5: Providing a Defence contribution to UK influence.*

What Defence *must be prepared* to do:

MT 6: Defending our interests by projecting power strategically and through expeditionary interventions.

<sup>3</sup> Hd Defence Strategy and Priorities has the lead on the development of the strategy.

MT 7: Providing security for stabilisation.

2.9 In order to devise a force structure, more detailed Defence Planning Assumptions (DPAs) are applied relating to issues such as the size of operations we plan to undertake and how often we might undertake them. The assumptions serve as a planning tool to guide defence in the development of the armed forces and are not a set of fixed operational plans or a precise prediction of the precise operations that we are likely to plan to undertake. The DPAs serve to codify the outcomes of the SDSR for Defence planners and move towards achieving Future Force 2020 (FF20). FF20 has three broad elements:

*The Committed Force*<sup>4</sup> comprises those force elements required to meet Defence's standing commitments, focused primarily on MTs 1 to 4. This requirement is force driven by the non-discretionary, inescapable elements of our NSS. For maritime surveillance these include elements such as strategic intelligence and support to UK Counter Terrorism operations.

*The Responsive Force*<sup>5</sup> comprises those force elements that are required to respond to the full range of demands for which the UK should be prepared. It provides a range of capabilities, across all environments, which allow us to: respond to non-enduring contingencies, mounting an enduring stabilisation operation at up to brigade level, and conduct enduring deterrence, coercion and containment, principally, but not exclusively, in the Air and Maritime environments.

*The Adaptive Force*<sup>6</sup> comprises those elements of the force structure that are neither routinely attributed to the Committed nor Responsive Forces: it is the generating force for all maritime assets and for those land and air force elements (Regular and Non-Regular) required to service an enduring operation.

#### *Details of all studies and strategy papers undertaken into maritime surveillance*

2.10 Given the very broad Departmental interpretation of Maritime Surveillance, it would not be realistic to provide a comprehensive list of every study or strategy paper which might be within its scope. However, if, as the Committee pursues its inquiry, it is able to narrow the focus of its interest, then the Department will seek to provide further information.

#### *Details of any planned future studies into maritime surveillance*

2.11 Similarly, if the Committee identifies particular areas of interest in relation to future studies during its inquiry, we will seek to provide further information.

#### *The Committee request a copy of the capability investigation in 2011 into the long term requirements for maritime surveillance capability*

2.12 The Wide Area Maritime Underwater Search study sought to establish the nature and size of any "wide area" Anti Submarine Warfare (ASW) capability risk, over time, and to identify and test options for mitigation. \*\*\*.

### CURRENT THREATS

#### 3. *What are the current threats that require the UK Armed Forces to have maritime surveillance capabilities?*

3.1 Our assessment of current and future threats is informed by past experience and the prevailing and anticipated environment. It is therefore not static. These threats in the maritime domain include but are not limited to:

- Submarine Threat \*\*\*and the proliferation of modern submarines across the world. \*\*\*.
- Surface-borne threat—Globally present (ranging from Homewaters, the Falklands, Arabian Gulf, Gulf of Aden and Far East) that require layered force protection of deployed Forces. \*\*\*and extends to such disciplines as Warfighting to Counter-Terrorism, Counter-Piracy and high-threat Counter Narcotics operations.
- Air Threats—deployed maritime units contribute to the compilation of the air picture and complement shore-based aircraft both in detection and interception of air threat crossing maritime areas.
- Threats to Resource & Energy supply—such as the risk of mining/attack in strategic choke points such as Straits of Hormuz or support to MMO for Fishery Protection.
- Threats to UK Borders—counter drugs operations and preventing illegal immigration.
- Threat of Pollution/Environmental disaster, including major weather events.

In relation to each of these threats, the purpose of maritime surveillance is to identify them and support effective decision-making at the strategic, operational, and tactical levels.

<sup>4</sup> Referred to in CM 7948 as the "Deployed Force".

<sup>5</sup> Referred to in CM 7948 as the "High Readiness Force"

<sup>6</sup> Referred to in CM 7948 as the "Low Readiness Force"

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## FUTURE ROLE AND REQUIREMENTS

### 4. What work has been undertaken to assess the future maritime surveillance capability requirements of UK Armed Forces?

4.1 The SDSR resulted in a plan to deliver Future Force 2020, including the required maritime surveillance capabilities. Subsequent planning rounds have made further adjustments based on a range of inputs in order to bring the defence budget into balance with resources whilst maintaining a path to Future Force 2020 (FF2020).

#### *What are the future threats that require UK Armed Forces to have maritime surveillance capabilities?*

4.2 Future Maritime Operational Concept (FMOC) lays out the strategic context and trends that the UK may face up to 2025. Although threats such as Fast Attack Craft; Improvised Explosive Devices; Submarines; and Mines are similar to those faced now, the new levels of capability and complexity of the threats bring increased risk to the UK. Understanding the “Pattern of Life” ie normalised activity in the maritime domain and new threats such as Directed Energy Weapons (DEW) and Electro-Magnetic Pulse devices may proliferate and have to be countered. Maritime surveillance will continue to play an important role in the key Military Tasks and is an important capability to link strategic intelligence to actions at the tactical level.

### 5. Description of the current maritime surveillance capabilities, assets and platforms of each Service, including numbers, their primary role and any other roles

5.1 The Committee should note that all current and planned capabilities are subject to consideration in the course of annual planning rounds. The current planning round is still ongoing and the outcome will be announced by the Secretary of State when decisions have been made.

5.2 Current maritime surveillance capabilities range from organic systems permanently fitted or allocated to platforms to provide intimate, immediate and assured support, to specific equipments that are fitted as required by more specific tasking. These capabilities can be operated in isolation, in collaboration with other units from all three services or with other nations.

5.3 Planning for contingency will always include an element of maritime surveillance and UK Joint and Allied assets can be included in such effort, probably as part of a Task Force. A recent example of such collaboration was the activation of the Response Force Task Group to provide options during the Arab Spring uprisings. This Task Group was the fulcrum of Maritime Surveillance activities, operating with land based and maritime air assets (RAF, Army and Allies), while being geographically widely dispersed (East and West of Suez) it provided the fullest picture and widest options to the UK Government and deployed military assets.

#### Submarine Fleet

- Six Trafalgar Class SSNs—\*\*\*
- One Astute Class SSN—\*\*\*

The Committee should note that primary warfighting role of SSNs is ASW and Anti-Surface Warfare (ASuW), including protection of the Nuclear Deterrent. Their maritime surveillance roles include: the provision of Indications and Warnings (I&W) in high threat environments; the delivery of Special Forces (SF) to conduct covert surveillance; the delivery land attack in the form of precision Tomahawk Land Attack Missile (TLAM); \*\*\*.

#### *Effectiveness*

\*\*\*. The UK’s SSNs are interoperable with Allied Fleets, especially the US and France. Coordination of submarine assets is highly evolved and ensures the very best in coordination of surveillance effort and safety.

#### *Description of any decisions to extend their service, replace them or remove them from service up to 2020*

The T-Class are currently being replaced by Astute but are being extended in service to align with the delivery of the ASTUTE Programme.

#### Surface Fleet & Royal Fleet Auxiliary (RFA)

For the surface fleet, we would highlight the distinction between Destroyers and Frigates (Type 45 and Type 23) and Capital Ships, whose primary roles are warfighting and maritime security, to which maritime surveillance is integral, and all other major surface ships, including RFAs, Mine Countermeasure Vessels (MCM), an Ice Patrol Ship (IPS) and Offshore Patrol Vessels (OPVs)/P2000, which provide maritime surveillance, but only as part of their secondary roles.

- **19 Frigates and Destroyers (FF/DD)/three Capital Ships:** Primary roles are Warfighting, Maritime Security and International Engagement. They provide persistent presence in international waters enabling Command and Control, Surface, Air and Sub-Surface Surveillance, Intelligence, Surveillance, Target Acquisition & Reconnaissance (ISTAR) and Search and Rescue (SAR).

Key capabilities are enabled by Advanced Radar, Active & Passive Sonars, Passive Electronic Surveillance fits (Comms and Radar), Comprehensive Radio Fits (Including Bowman) and Comprehensive Command systems linking and sharing Information, AIS (for identification of shipping). Flight Decks permit extended range maritime surveillance through use of maritime patrol helicopters.

- **13 RFA Vessels:** Primary roles are Afloat Reach and Sustainability. Secondary roles include Maritime Security (Maritime Surveillance inherent to Maritime Security). RFA vessels provide persistent presence in international waters enabling Limited Command and Control, Air and Surface Surveillance, ISTAR, SAR, Humanitarian Aid (HA)/Disaster Relief (DR). Flight Decks permit extended range maritime surveillance through use of maritime patrol helicopters.
- **14 Mine Countermeasure Vessel (MCM):** Primary role is the deployment of Mine Countermeasures. Secondary roles include Maritime Security (Maritime Surveillance inherent to Maritime Security)—provides persistent presence in international waters enabling Limited Command and Control, Sub-Surface and Surface Surveillance, ISTAR, and SAR.
- **One Ice Patrol Ship:** Primary role is the support of Scientific Research in the Antarctic. Secondary roles include Maritime Security (Maritime Surveillance inherent to Maritime Security)—provides persistent presence in international waters enabling Limited Command and Control and Surface Surveillance, ISTAR, and SAR.
- **Offshore Patrol Vessels/P2000:** Primary roles are Offshore Patrol (in support of Marine Management Organisation) and Overseas Territories (OTs). Secondary roles include Maritime Security (Maritime Surveillance inherent to Maritime Security)—provides persistent presence in national/international waters enabling limited Command and Control, Surface Surveillance, ISTAR, and SAR.

#### *Effectiveness*

The surface Fleet and RFA provide 24/7 Maritime Surveillance. Globally deployable, they can be present in those areas of the world so that over a period of months a pattern of life and maritime picture is established. Using their organic radars, sensors and aircraft they can provide a significant contribution to the surveillance picture, understanding the pattern of life, inter-operating with other nation's ships and aircraft in order to compile the fullest of picture understanding.

#### Fleet Air Arm

- **Sea King (SKASaC) 13 Aircraft, of which 10 are in the forward fleet:** Entering service in 1982 solely as a maritime Airborne Early Warning platform, this helicopter now has primary roles of Wide Area Surveillance and Battlespace management across Land, Air and Maritime domains.

Key capabilities are enabled by an advanced radar which uniquely provides wide area surveillance of land sea and air contacts with battlespace management. The aircraft exploits comprehensive radio fits, Electronic Support Measures (ESM) and Link 16 for information sharing. It can operate from most RN, RFA and coalition warships of FF/DD size or greater.

#### *Effectiveness*

SKASaC has demonstrated its wide ranging surveillance utility in being able to support Operation HERRICK (Afghanistan) with dedicated Ground Moving Target Indication Support while primarily still being an Organic maritime surveillance capability deployed in support of Task Group Force Protection (eg Libya). \*\*\* SKASaC maintained concurrent and unbroken support to Operation HERRICK and Operation ELLAMY (Libya).

*Description of any decisions to extend their service, replace them or remove them from service up to 2020*

SKASaC will be retired from service in 2016; thereafter the SKASaC is planned to be replaced by CROWSNEST, which will see the capability hosted by the Merlin:

- **Merlin HM Mk1- 38 Aircraft, of which 30 are in Forward Fleet:** Primary roles are Anti-Submarine (Underwater Surveillance), Anti Surface Unit Warfare (including Maritime Surveillance, Counter Piracy/Narcotics) and Maritime Counter Terrorism. Secondary Roles include Force Protection, SAR, Casualty Evacuation (CASEVAC), Load Lifting, and Troop movement.

Key capabilities are enabled by Active Sonar, Deployable Sonarbuoys, Radar, Infrared/Television (IR/TV) HD Camera, Comprehensive Radio Fits (including Bowman) Link for information sharing, and Maritime Sniper Teams.

#### *Effectiveness*

Merlin HM Mk1 has evolved organic Anti Submarine Surveillance to a Maritime Patrol Helicopter multi-role capability deployed globally and in support of the strategic deterrent. Its organic utility in support of Task Group Operations both for Anti-Submarine Warfare, Anti-Surface Unit Warfare and secondary roles is critical.

Also deployable in Type 23 Frigate and RFAs its broader utility to support counter narcotic, counter piracy, lift, Non-Combatant Evacuation Operation (NEO) and troop lift/casualty evacuation operations demonstrate its value.

*Description of any decisions to extend their service, replace them or remove them from service up to 2020.*

The conversion of Merlin Mk1 to Mk2 standard will provide 20 helicopters available for global tasks. The Merlin Capability Sustainment Programme is planned to complete in December 2014, \*\*\*.

- **Lynx Mk8 HMA, 44 Aircraft, 30 of which are in Forward Fleet**—Primary roles are Anti Surface Unit Warfare (Maritime Surveillance and Strike including Counter Piracy/Narcotics), Maritime Counter Terrorism and Anti-Submarine Warfare, Force Protection. Secondary roles include SAR, Casualty Evacuation (CASEVAC), Load Lifting/(Vertical replenishment (VERTREP), and Limited Troop movement.

Key capabilities are enabled by Radar, Infrared/Television (IR/TV) HD Camera, Comprehensive Radio Fits, and Maritime Sniper Team.

### *Effectiveness*

Lynx MK8 is an integral element of frigate and destroyer capability providing long range maritime surveillance and maritime strike both in support of Task Groups and single unit deployed operations. Its multi-role utility in support of counter piracy, boarding operations and Maritime Counter Terrorism demonstrate its wider value.

*Description of any decisions to extend their service, replace them or remove them from service up to 2020.*

Lynx Mk8 will be withdrawn from service from 2017, to be replaced by the Wildcat Maritime Surveillance/Strike platform. \*\*\*.

### Fixed Wing

Maritime surveillance from fixed wing aircraft benefits from their strategic reach, speed of response, speed of search, elevation and discrimination. Following the removal of Nimrod, the current inventory of fixed wing assets are not fully optimised for the maritime environment.

- **SENTINEL**—an all-weather, day/night, airborne wide area surveillance and imaging radar system capable of detecting fixed or stationary and moving ground targets in near real time. This system is scheduled to be removed from service after the withdrawal from Afghanistan in 2015. \*\*\*. In terms of capability it would be aligned with a detect capability similar to that provided by the E-3D SENTRY as opposed to the former Nimrod MR2 detect and identification capability. SENTINEL does not currently have an endorsed maritime surveillance role.<sup>7</sup>

SDSR planned to retire SENTINEL from Service in Apr 2015 subject to Op HERRICK conditions. Following operations in Libya, the Department was asked to consider how it might retain SENTINEL beyond 2015, but no decision has yet been taken to do so.

- **SENTRY**—The UK E3D Sentry force comprises six aircraft which will be retired from service in 2025 under current planning assumptions. Sentry is the UK's prime airborne early warning and control platform which can conduct long range detections and intercepts of air contacts; two Sentry aircraft and three crews deployed to Operation ELLAMY where they flew one sortie per day providing air surveillance and battlespace management over land and sea. The aircraft's radar has been modified to include a Maritime Scan to Scan Processing (MSSP) capability, which allows it to detect surface contacts in low sea states.

### ISTAR assets

- \*\*\*

The ability for warships to loiter unseen over the horizon and conduct surveillance of adjacent waters, the littoral, and penetrate inland of a target country has long been used to national advantage. \*\*\*.

Similar systems are already fitted in, and are in development for, submarines which can provide a similar range of collection and surveillance options, but with added covertness and with the ability to be deployed well in advance of an operation being declared. Their endurance and tactical mobility brings an agility that continues to be used across the full gamut of surveillance requirements in the maritime domain both militarily and by OGDs.

In addition to ISTAR collection platforms, there is a requirement to analyse and disseminate intelligence products. There are several service based systems that do this:

<sup>7</sup> The only SDSR endorsed operational role for SENTINEL is OP HERRICK

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- **Recognised Maritime Pictures** are displayed on various systems and at various classification levels depending on the source of the data. At the unclassified level full use is made of information made available from open sources such as the globally recognised Automatic Identification Systems (AIS) via the TELESTO system. \*\*\*.
  - **Surveillance imagery** (both still and video) is provided from:
    - **Project PICASSO** provides a national capability for the provision of strategic imagery intelligence (IMINT) and Geospatial Information (GEOINF) to the MOD, to deployed forces and to OGD through the exploitation of data gathered from national and multi-national collection assets.
    - **Project MAINMAST.** Lessons Identified from Op KIPION (follow-on from Operation TELIC in the Persian Gulf) and Op ELLAMY articulated the requirement for increased access to imagery intelligence in the contingent maritime domain. The Imagery Exploitation Programme will take this work forward as Maritime Imagery Manipulation and Storage.
  - **Maritime IPA.** Navy Command Headquarters (NCHQ) required a Relational Database for maritime environment specific activity.
  - **Remote Viewing Terminals (RVT).** Up to eight ROVER RVTs are currently fitted to destroyers or frigates deploying on out of area operations east of Suez, originally as part of the TELIC UOR but most recently as part of Op KIPION allowing them to draw information from US controlled Unmanned Air Systems (UAS) in the Northern Gulf (or anywhere else that US UAS are deployed).

*What are the current gaps and deficiencies in maritime surveillance capabilities?*

5.4 During the SDSR, a wide-ranging assessment was undertaken of future defence outputs and the options available to deliver them within the resources available. Our resulting plans for Future Force 2020 reflect the force structure and capabilities that we intend to deliver. Across the armed forces, there are understandable aspirations to do more, and instances where certain decisions to defer or delete equipment programmes have caused concern and led to practical consequences which have had to be managed; for example the run-on of in-service equipment. But the Department has had to deal with changed economic circumstances and the serious over-commitment of the forward defence programme. It does not make sense in many cases to talk about capability gaps against what may have been previously unfunded aspirations.

5.5 However, the Department has acknowledged that the decision not to bring the Nimrod MRA4 into service has had a number of capability implications. These have been set out in Part 3 of the National Audit Office's Major Projects Report 2011 (See Annex C).<sup>8</sup> In summary, it has reduced our ability to conduct Strategic Intelligence gathering tasks, long range Anti Submarine warfare, provide support to Search and Rescue, Maritime Security and power projection tasks.

5.6 The Type 22 Frigates, in addition to their broader platform capabilities, also provided the RN's only composite capability to deliver wide ranging surveillance of the Electromagnetic Spectrum from the sea. This capability supported Indicators and Warnings, Force Protection and Situational Awareness; \*\*\*.

5.7 As acknowledged in relation to question 7 below, the need for so-called "persistent intelligence, surveillance and reconnaissance (ISR)" capability has been identified by a number of recent operational lessons identified exercises. While this requirement may not in practice translate into a single system or platform, we judge that a significant improvement in maritime surveillance capability (both wide area and targeted) might be provided through the use of an UAS deployable from the Maritime Force.

5.8 The Department has stated its intention to mitigate the impact of Nimrod cancellation by the use of other military assets on a case by case basis. In relation to ASW operations, these assets include Type 23 Frigates and Merlin Mk1 helicopters. Additionally, Hercules C-130 and Sentry could offer a limited element of the maritime patrol capability that MRA4 would have provided. There is currently no single asset or collection of assets that offsets the resulting capability gap.

*What comparative analyses have been undertaken of the effectiveness of different platforms in undertaking the same maritime surveillance task? (For example how many ships are required to cover the equivalent range of an aircraft?)*

5.9 In the specific example given above, ships and aircraft provide very different capabilities. An aircraft, in particular Fixed Wing Maritime Patrol Aircraft (MPA), provides reach, speed and height, while a ship provides sustained reach, versatility, poise (persistence), resilience and leverage. The three defining characteristics of air power (from Air Publication 3000) are speed, height and reach. The defining characteristics of maritime power (from Joint Doctrine Publication 0-10) are Access, Mobility, Lift Capacity, Sustained Reach, Versatility, Poise, Resilience, and Leverage).

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<sup>8</sup> Not printed

5.10 In terms of surveillance from the air, the significant factor is height. Fixed Wing MPA fly at greater heights typically 35,000 feet which extends detection ranges while helicopters are limited to 10,000 feet in height which reduces the radar horizon on the earth's surface to circa 124nm. In comparison to Fixed Wing assets, helicopters have a limited payload and endurance but this can be offset to a degree through being refuelled and supported from a forward deployed ship. In comparing the numbers of aircraft required against the number of ships to do the same task then there is some breadth to the answer. One ship and its helicopter (or future UAV) can stay on task for months at a time whereas an MPA would be continually cycled from a suitable airfield and probably use circa three a/c and five crews. An MPA would be able to cover significantly more surface area than a single ship and more quickly, but a similar rotation in a/c and crews would be required in order to achieve a persistent picture. This highlights the importance of having air capability deployed in maritime units in order to complement other airborne surveillance capability and mitigate the impact on operations of any absence or reduction of Fixed Wing assets.

5.11 Comparative analyses have been covered by:

- The Wide Area Maritime Underwater Search (WAMUS) Capability Investigation, provided separately.
- \*\*\*
- \*\*\*
- Helix—“Innovative Viable Alternatives to Nimrod and Potential Cost Savings”—a Paper by DG S&T Strategy from November 2008.
- Maritime Unmanned Air System (UAS) comparisons were addressed in:
- Maritime Unmanned Air Vehicle (UAV) Capability and Cost Comparison study report, DSTL/TR06694/1.0, June 2003.
- Maritime UXV cost capability review—UAV report, QinetiQ/D&TS/Sea/TR057143/1.0, 23 January 2006.

*Description of the current use of unmanned aerial vehicles, space technology and other technology assets for maritime surveillance*

5.12 The UK has no UAS employed specifically for maritime surveillance. US satellite products are exploited via a number of imagery and signals processes to support wider maritime surveillance operations; exact capabilities are naturally highly classified. \*\*\*. Some commercial satellite services can be purchased and are unclassified in nature—typical capabilities include high-definition imagery and Automatic Identification Service (AIS), which provides data on commercial shipping over 300 tonnes.

STATISTICS

6. *Information on the number of operations undertaken by maritime surveillance capabilities, platforms and assets in the last 10 years for (a) anti-submarine detection, (b) shipping surveillance, (c) fleet protection, (d) ISTAR, (e) ELINT data gathering, (f) counter-terrorism (g) weapons deployment, (h) search and rescue, (i) counter-piracy operations (j) overseas maritime patrol and (k) protection of Trident submarines.*

6.1 The information requested by the Committee is not held centrally by the Department, nor in the form specified. In practice, this would cover all operations conducted by the Royal Navy over the past ten years. \*\*\*. Should the committee wish to ask questions about the operations, there is a risk that the answers would entail access to Top Secret information, which the Department would be unable to provide, though we can provide more detail at the Secret level.

FUTURE MARITIME SURVEILLANCE CAPABILITIES

7. *Assessment of the future maritime surveillance capabilities, assets and platforms needed by the MoD and UK Armed Forces and description of measures being taken to address these.*

*What lessons have been learned from recent operations and how are these incorporated into decisions on future requirements?*

7.1 A common theme from recent operations is the need for persistent ISR. This is the requirement to deploy an enduring collection capability (available 24 hours per day for the duration of the operation) that is capable of gathering intelligence and conducting surveillance and reconnaissance. In practice, the persistent capability can be made up of several different platforms with differing capabilities operating in unison. Situational awareness is generated and maintained through the synthesis of several maritime surveillance collection capabilities—overhead satellites, manned and unmanned platforms and ships and submarines. The lessons are absorbed into Defence planning and serve to inform Balance of Investment decisions for equipment capability. The following operations have identified this requirement:

- \*\*\*
- \*\*\*
- \*\*\*

7.2 The Gulf Stocktake is a contingency study aimed to ensure maritime Forces are adequately prepared for potential operations in the Arabian Gulf area. Risks identified included the need for a capability to mitigate both wide and narrow area surveillance.

7.3 Specific future maritime surveillance projects are \*\*\* and CROWSNEST. Both planned capabilities \*\*\* and should be in-service in the latter part of the decade. \*\*\* the CROWSNEST radar has long-range and battle-space management capability.

*What are the priorities for maritime surveillance capabilities between now and the next SDSR?*

7.4 The priorities for Maritime Surveillance are delivery of non-discretionary activity (MT 1–4) and the enabling of our discretionary activity (MT 5–7)

*What will be the challenges in the next SDSR for maritime surveillance capabilities?*

7.5 The challenges in the next SDSR for maritime surveillance capabilities include:

- the identification and assessment of future risk across the Department’s primary and secondary roles;
- planning for an ever increasing need for timely surveillance and targeted information through technological advancement; and
- in consultation with the UK Civil Authorities, provision for the increased responsibility of the forthcoming Exclusive Economic Zone.

*Description of the future use of unmanned aerial vehicles, space technology and other technology assets for maritime surveillance*

7.6 The Flexibly Deployable UAS Capability Concept Demonstration (CCD) aims to investigate the utility of an air vehicle with sufficient precision and persistence to provide a high quality ISTAR feed to deployed commanders where airfield support is not available/cannot be assured; the most demanding scenario envisaged being launch and recovery from an FF/DD sized vessel at sea.

## COSTS

8. *What are the costs of current maritime surveillance capabilities, assets and platforms of UK Armed Forces (including capital costs and total running costs) in the last 10 years?*

8.1 The cost of maritime surveillance capabilities are not held centrally in the form requested by the Committee. Running costs include maintenance, base support provided by contractors and consumables such as fuel and food. It is not possible to apportion these costs to individual platforms on a reliable and consistent basis. Nor do we hold records of the capital costs of platforms originally approved more than ten years ago (such as T22 Frigates and T-class submarines).

8.2 In order to provide indicative costs of capability, the following have been chosen to highlight the diversity of platforms capable of surveillance. *It must be reiterated that for larger platforms such as the T45 and Astute, surveillance is only one of many roles being undertaken, either exclusively or simultaneously.* They will, however, be conducting surveillance continuously.

### Astute Class Submarines

The Astute costs below are based on the equipment project costs; manpower costs are presented further on in the paper.<sup>9</sup>

<i>Costs to Date</i>	<i>Forecast/Actual Cost £ million</i>
Cost of Assessment Phase	£29
Cost of Demonstration & Manufacture Phase Boats 1–3	£3,480
Cost of Demonstration & Manufacture Phase Boat 4	£1,404
Cost of Demonstration & Manufacture Phase Boat 5	£586
Cost of Demonstration & Manufacture Phase Boat 6	£253
Cost of Support Phase—Initial Support Solution	£272
Cost of Support Phase—Astute Class Training Service Boats 1–3	£648

### Type 45 Destroyer

The T45 Destroyer costs below are based on the equipment project costs; manpower costs are presented further on in the paper.<sup>10</sup>

<sup>9</sup> Costs to date have been extracted from the NAO Major Projects Review of the MoD, 2011

<sup>10</sup> Costs to date have been extracted from the NAO Major Projects Review of the MoD, 2011

<i>Costs to Date</i>	<i>Full cost (£M)</i>
Assessment Phase	232
Demonstration and Manufacture	5,664
Support Costs/PFI	742
Total for six ships	6,638

River Class Offshore Patrol Vessels<sup>11</sup>

<i>Annual Costs</i>	<i>Full cost (£M)</i>
Total manpower	9
Total Consumables & Depreciation	1
Total DE&S costs	11
Total for three ships	21

Sea King Mk 7 Area Surveillance and Control (SKASaC)<sup>12</sup>

<i>Annual Running Costs</i>	<i>Full cost (£M)</i>
Total manpower on SK Mk7 Force (assume 150)	8
Total Sea King Mk 7 airframe support costs	30
Total Mission System Support Costs	10
Total for 13 aircraft	48

## E-3D Sentry (Airborne Warning and Control System (AWACS))

<i>Annual Running Costs</i>	<i>Full cost (£M)</i>
Total manpower on SENTRY Squadron (assume 308)	15
Total SENTRY airframe and Mission System support costs	84
Total for six aircraft	99

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*The number of UK Armed Forces personnel, including support staff, required to provide these capabilities at optimum level of operations?*

*Details of current levels of UK Armed Forces personnel trained, including support staff, in providing these capabilities broken down by Service and platform?*

8.3 The figures below provide manpower numbers for *indicative* Maritime platforms and for a squadron of three Sea King Mk 7 Helicopters (as compared to total force numbers provided above).<sup>13</sup> Full support staff based across the wider MOD has not been included.

<i>Annual Manpower Costs for Indicative Platforms</i>	<i>Personnel</i>
T45 Destroyer Manpower	222
T23 Frigate Total Manpower	172
SSN Manpower Total	167
Sea King Mk7 Squadron & Support Personnel	55
Minor War Vessel Total Manpower	43
Sentry Squadron Personnel	308

<sup>11</sup> These figures have been extracted from the full running costs of the River Class OPV provided by NCHQ

<sup>12</sup> Figures have been provided by the Sea King Delivery Team in DE&S. Manpower assumptions based on 3 squadrons of 50 personnel each.

<sup>13</sup> Provided by Fleet Resource & Programmes Manpower

*What measures are in place to ensure UK Armed Forces personnel maintain the necessary skills to provide these capabilities?*

8.4 Skills are maintained through individual and collective training across all of the environments ie air, surface and sub-surface. Individually, Maritime Surveillance and associated systems are covered within professional career courses at the Officer and Rating level. Collectively, Maritime Surveillance and associated systems are covered, and exercised, during Flag Officer Sea Training (FOST) and Joint Warrior collective training serials.

*Description of the Seedcorn initiative and other similar initiatives, including number of UK Armed Forces personnel involved and costs*

8.5 The RAF Seedcorn programme is one of three pillars of activity designed to preserve the perishable skills in the event that a decision were to be taken to regenerate UK MPA capability, supported by UK ISTAR flying and maritime staff appointments. Seedcorn personnel represent a blend of experience, qualification and time to serve to populate any future capability while providing our Allies with instructional, trials and MRA4 experience. Incumbents are embedded in frontline squadrons, instructional units and operational test and evaluation organisations all of which will provide critical skill sets in a future force. In addition to the existing exchange programme, 34 personnel have been assigned to the Seedcorn programme: Six to Canada; two to Australia; six to New Zealand and 20 to USA.

8.6 With respect to the RN, there is an unmanned aviation element where the RN maintains a number of posts on US Reaper Squadrons at Creech Air Force Base to provide seed corn UAS expertise.

8.7 The RN also has a number of personnel embedded with US combatant commands and agencies in order to maintain a global signals intelligence (SIGINT) analysis capability.

*9. What are the estimated costs of future maritime surveillance capabilities, assets and platforms of UK Armed Forces?*

9.1 The UK MOD's maritime surveillance capabilities are delivered by a wide range of platforms and assets; for example, every RN vessel at sea carries out maritime surveillance routinely and continually. For these reasons, we cannot provide a comprehensive estimate of future maritime surveillance costs. The following programmes will, however, potentially be the major providers of our future maritime surveillance capability: the TYPE 26 Global Combat Ship, the WILDCAT helicopter, the Crownsnest airborne radar and \*\*\*. We should be happy to provide the Committee with the estimated costs for each of these programmes once we have concluded the process of bringing the Defence Budget into balance with the resources available.<sup>14</sup>

#### REGENERATION OF CAPABILITIES

*10. What plans are in place to ensure that maritime surveillance capabilities are maintained?*

10.1 The Department's plans to achieve Future Force 2020 include investment in programmes that provide flexibility and advanced capabilities, including the maintenance of maritime surveillance capabilities.

*11. What assessment has been made of the capability of the MOD and UK Armed Forces to regenerate maritime surveillance capabilities, including costs?*

11.1 Although there has been no formal assessment, the SDSR<sup>15</sup> made a commitment to maintain the ability to regenerate capabilities that we plan not to hold for the immediate future. This will require plans to maintain technical expertise, keep skills and training going, and work with allies and partners who do hold such capabilities and with whom we can, for example, exchange personnel such as the Seedcorn activity discussed (Question 8).

11.2 \*\*\*

*12. What plans are in place to regenerate these capabilities especially at short notice?*

12.1 There are currently no plans to regenerate specific capabilities, but, as with any military capability, if current assumptions about the Strategic environment and threats change significantly then consideration will be given to enhancement options.

*What is the role of industry in the maintenance and regeneration of these capabilities?*

12.2 Industry has a key role in the delivery and support of maritime surveillance equipment but there has been no discussion with them about the regeneration of specific capabilities.

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<sup>14</sup> Ev 51

<sup>15</sup> SDSR page 20

*What discussions has there been with industry regarding the regeneration of maritime surveillance capabilities?*

12.3 There has been no discussion with industry about the regeneration of specific Maritime Surveillance capabilities.

*What is MoD policy on whether maritime surveillance should be a sovereign or “off the shelf”?*

12.4 The Government’s overarching policy was set out in the White Paper called “National Security through Technology: Technology Equipment, and Support for UK Defence and Security” (Cm 8278) as well as an accompanying Consultation Summary Paper. This White Paper sets out how the Government will procure technology, equipment, and support to meet the UK’s defence and security needs, at a cost which is affordable and represents value for money for the UK taxpayer.

12.5 It also considered the UK defence and security industry’s contribution to wider economic growth. The White Paper addresses the Government’s role in supporting defence and security exports from UK-based suppliers and encouraging Small and Medium-Sized Enterprises (SMEs), to fulfil their potential when responding to defence and security requirements. This is the MOD’s high-level policy until the next strategic review, which is expected to be held in about 2015. It supersedes the Defence Industrial Strategy 2005 and the Defence Technology Strategy 2006.

12.6 The starting point for defence and security procurement is the open procurement principle. This is that, wherever possible, the MOD will seek to fulfil the UK’s defence and security requirements through open competition in the global market, seeking to buy off-the-shelf where we can. We will also take action to protect the UK’s operational advantages and freedom of action where this is essential for our national security. As with all acquisition choices, this is subject to affordability and value-for-money. Any investment will be carefully prioritised against needs such as immediate operations, longer term future capability, infrastructure, retention of intelligent customer ability and maintaining credibility with allies.

12.7 Specific judgements on specific maritime surveillance capabilities will be made on a case by case basis in due course.

*What research and development projects have been undertaken in the last 10 years and are planned for the next 10 years?*

12.8 Given the very broad Departmental interpretation of Maritime Surveillance, it would not be realistic to provide a comprehensive list of every research and development (R+D) project undertaken or planned over this very wide timeframe. However, if, as the Committee pursues its inquiry, it is able to narrow the focus of its interest, then the Department will seek to provide further information.

13. *What priority is given to being able to use maritime surveillance kit in various platforms?*

13.1 In relation to the Nimrod MRA4 programme, wherever possible, its specialist equipment was removed and stored pending its possible redeployment to other platforms. However, there is no more general initiative to make specialist maritime surveillance equipment capable of deployment on multi platforms.

13.2 Priority is given to units that are deployed on operation, closely followed by those preparing to deploy on operations to allow training on the equipment need in theatre. There are insufficient equipment fits available for every RN platform (Ship/SM/Aircraft), therefore it is fitted in line with the Maritime Capability Framework requirement.

#### CO-ORDINATION WITH OTHER GOVERNMENT DEPARTMENTS

14. *Description of the role of other Government Departments and agencies in maritime surveillance*

14.1 Maritime surveillance is a cross-government activity involving several departments and agencies. Maritime Surveillance of the UK maritime border and Fishery Conservation Zone (FCZ) is primarily a civil issue (Home Office and DEFRA and devolved administrations through their agencies UKBA, MCGA, Police, MMO and Marine Scotland Compliance etc). The MOD assists OGDs through the provision of assets/capability either on an agreed basis (ie MOU) or through urgent response for Military Aid to the Civilian Authorities (MACA).

15. *How does the MoD coordinate its work and interact with other Departments and agencies and plans for the future?*

15.1 As referred to above, MOD coordinates its work and interacts with OGD and agencies through a series of agreements to share information and provide support as required.

*How effective is the MoD's coordination and interaction with other Departments and agencies and how is this assessed?*

15.2 The NSD decided in Jan 2010 to strengthen strategic oversight of maritime security and improve situational awareness of the maritime domain through establishment of the multi-agency NMIC.

15.3 The work of the Maritime Security Oversight Group (MSOG) is still developing but strategic oversight/direction of cross-government work on maritime security has improved significantly and for the first time the UK has a comprehensive picture of threats and risks to the maritime border. We expect the effectiveness of cross-government working to increase. Current work includes more effective coordination of coastal/offshore assets (MOD Offshore Patrol Vessels and UKBA cutters) and provision of a single more efficient and cost effective single air surveillance contract to cover the UK economic zone.

*What are the lines of demarcation between the MoD and other Departments and agencies and how are these determined?*

15.4 Lines of demarcation between the MOD and other Departments and agencies are established by agreements and through close cross Government working. For example, a formal arrangement is in place between the MOD and the MMO for the provision of Fishery Protection and with the DfT for the provision of Search and Rescue. Other Military Aid to the Civil Authority is determined through close dialogue and results in the issue of Chief of the Defence Staff (CDS) Directives for specific operations which cover how the MOD interacts with OGD/agencies.

*What arrangements are in place for the MoD to recover costs from other Government Departments and agencies when MoD and UK Armed Forces assets are used for purposes that are the prime responsibility of other departments and agencies?*

15.5 Formal arrangements are in place to recover costs where appropriate. For example, the MOD provides assets to Marine Management Organisation (MMO) to assist in the enforcement of the UK Fishery Surveillance Zone for which the MMO provides a contribution to MOD.

*What input do UK Armed Forces have into the coordination, interaction and demarcation between MoD and other Government Departments and agencies?*

15.6 MOD interaction with OGDs on Maritime Security is now coordinated through the MOD Strategy Unit who represent MOD in Maritime Security Oversight Group (MSOG) assisted by Subject Matter Experts. Single Services are empowered to coordinate with OGD/agencies as appropriate.

*How is the impact on, and consequences for, UK Armed Forces of the arrangements between MoD and other Government Departments and agencies monitored and assessed?*

15.7 The Maritime Strategy Oversight Group (MSOG) is the forum for co-ordinating Departmental activity. It is for the Department to judge its capacity to support non-defence tasks, and to assess the impact of doing so, but currently no formal reporting arrangements exist.

*What is the role of the National Maritime Information Centre (including contribution of UK Armed Forces)?*

15.8 The NMIC is cross-government body located at the Northwood Headquarters in Middlesex. The Centre works in close cooperation with the main Government departments, under the auspices of Minister James Brockenshire's portfolio, and is accountable to the Maritime Security Oversight Group (MSOG). The NMIC brings together, existing functions to provide improved maritime situation awareness and support to lead agencies in the event of emergency or crisis. This develops a much better understanding of maritime safety and security risks and opportunities; information is shared across Government, and to Industry, regional and international partners, and the public as appropriate.

15.9 The Role of the NMIC is to:

- Actively monitor maritime activity around the UK and areas of national interest.
- Enable better understanding of maritime safety & security.
- Provide a "single voice" for maritime issues.
- Learn from maritime safety and security exercises.

15.10 The NMIC provides coordinated representation of maritime situational awareness as the foundation for UK Government and business to use in support of crisis management and decision making and sustainable development to assist designated organisations in their leadership role. The NMIC will facilitate a cross-Government approach to gathering information on maritime activity, de-conflicting and sharing departmental resources and ensuring the UK is able to take advantage of other global information sharing networks and frameworks.

15.11 The contributions by the Armed Forces to the NMIC are:

- Provision of host location at Northwood.

- Three members of staff.
- Financial contribution to annual running costs.
- Provision of defence capabilities as the backbone of a national maritime data sharing architecture.

#### COLLABORATION WITH, AND RELIANCE ON, ALLIES

##### 16. Description of current and planned future collaboration with allies

16.1 The SDSR was aimed at an affordable and balanced framework to provide an adaptable force structure. This resulted in reductions to the overall size of our Armed Forces and the cutting back of some capabilities. Strengthening our key defence alliances and partnerships has been critical in managing these changes.

16.2 From a maritime perspective, single service bilateral engagement since the SDSR has focused on strengthening partnerships with other nations who can assist with the provision of maritime surveillance capacity and establishing links to enable exchange of information either on a military to military basis or via NMIC.

16.3 Our approach and engagement with key defence partners has enabled us to broadly retain a full spectrum of capabilities. However, incoherent and uncoordinated US and European defence cuts could accentuate existing capability gaps; this is likely to be a key issue at the forthcoming NATO Summit in Chicago. Notwithstanding this, NATO continues to form the bedrock of our defence with the EU and bilateral agreements such as the UK/Netherlands Amphibious Force providing additional collaboration. Moreover, since the SDSR we have established the UK/French Defence Cooperation Treaty (November 2010) that has put in place senior level of co-operation between Chiefs of Defence (CHOD) focusing on: Operations and Training, a Combined Joint Expeditionary Force (CJEF) integrating Maritime Surveillance, capabilities and equipment encompassing submarine technologies and systems, Mine Counter Measures, and Satellite Communications; and Unmanned Air Systems. The UK is a partner nation in the NATO Naval Armaments Working Group to look at the feasibility of developing a NATO MPA Force.

16.4 There is also an ongoing European Defence Agency (EDA) project, Maritime Surveillance Network, between the UK, Finland, France, Italy, Sweden and Spain which aims to increase interoperability and harmonize requirements.

##### 17. *Information on maritime surveillance capabilities, platforms and assets of other countries (including allies and NATO)*

17.1 The attached document gives examples of airborne surveillance systems. To list the capabilities of all NATO's surface unit and submarine capabilities would be a very significant task.

See Annex D<sup>16</sup>

##### 18. *To what extent is the UK relying on allies, including US, NATO and EU, to provide maritime surveillance capabilities?*

18.1 Post-SDSR, the Department's reliance on allies to provide maritime surveillance has increased, but not markedly owing to the range of capabilities and sources of information still available to the Department. The withdrawal of Nimrod has required greater reliance on other nations to provide MPA cover (Norway/France in particular) but other mitigation may be put in place on a case by case basis when not available. Prior to its withdrawal, Nimrod was sometimes committed to tasking in other operational areas so even then we were at times reliant on other nations. The deletion has meant that the risks and mitigation required are now enduring factors.

##### *What are the criteria for deciding to use the maritime surveillance capabilities of allies?*

18.2 There are no formal, agreed criteria. For training, allies will bid into the planning of an exercise in order that surveillance capabilities from that nation can be considered and used. There are several international agreements that allow Allies to contribute directly to UK surveillance tasks in support of deterrent protection and intelligence gathering.

18.3 During the planning of an operation there are a number of factors that will be considered, including the capability itself; timeliness; and our ability to use the product of that capability. This interoperability and ability to use the surveillance capability of allies may be governed by MOUs.

##### *Details [or examples] of the provision of maritime surveillance capabilities by allies over the last 10 years*

18.4 Examples of the provision of maritime surveillance capabilities by Allies over the last 10 years include the provision of Maritime Patrol Aircraft from the USA, Canada and France during operations.

<sup>16</sup> Not printed

19. *Have there been any incidences when allies have declined to provide these assets?*

19.1 There are no known instances where assets have been declined but there have been occasions when these assets are not available.

20. *What contingency plans are in place if the UK was unable to secure the maritime surveillance capabilities of an ally?*

20.1 Depending on the nature of the operation in question, it might be the case that different UK assets could instead be tasked to address the operational requirement, or at least to mitigate the absence of the preferred asset. If there was still judged to be material risk to an asset on an operation, then choices may also exist for commanders to manage the risk at a tactical level, perhaps by changing operating procedures.

21. *What are the command and control structures when maritime surveillance capabilities are provided by allies?*

21.1 Command and Control (C2) for surveillance would fall under the relevant pre-existing C2 structure depending on whether the tasking is taking place under NATO, EU NAVAL FORCE or National Command. These C2 structures can be used in many different circumstances provided equipment is compatible. (For example, there may be unique bilateral or Partnership for Peace exercises that include non-NATO or non EU nations). There are several Operational Agreements that allow UK control of allied assets for certain operations.

22. *What are the costs to the UK of using allies' maritime surveillance capabilities?*

22.1 The UK is not usually charged for the use of allied maritime surveillance capabilities. However, there will be an expectation that reciprocal or equivalent benefit will be provided on the basis of UK assets provided as part of multinational or bilateral arrangements. In all cases, being a member of such sharing communities provides significant value for money and benefits geared greatly in the UK's favour.

23. *Details and copies of any analyses undertaken by NATO on maritime surveillance capabilities (including interoperability between members)*

23.1 NATO published the NATO Council of National Armament Directors (CNAD) document AC/141 D(2012)0002 outlining proposals for studies which lie within the scope of maritime surveillance. \*\*\*.

Tier 1 Multinational Approaches (MNA) are those being worked/developed, Tier 2 MNA are those being actively considered, and Tier 3 MNA are proposals. The NATO Naval Armaments Group (NNAG) will report progress in the autumn.

There are two NATO Smart Defence Initiatives concerning Maritime Patrol Aircraft (MPA):

*A Tier One proposal* led by the Germans to pool and share MPA assets that could be offset or recompensed by the UK providing C130, C17 and tanker hours. The *UK is not interested* in this proposal because we do not have MPA assets to pool; the nations involved (Italy, Luxembourg, Poland, Portugal, Spain and Sweden) that are able provide MPA will offer aging aircraft such as the P3 Orion that does not have the requisite level of avionics or reliability to support our Deterrent and would not offer value for money in exchange for the pooling of higher grade UK capabilities. Additionally there are concerns over sovereignty (related to the Deterrent in particular) and guaranteed assurance—\*\*\*.

*A Tier 2 proposal*—The NNAG investigation, led by the Canadians, to provide a long term solution by means of MPA procurement; this would provide a NATO capability akin to the AWACS model. *The UK supports this proposal* because it overcomes the sovereignty and assurance issues whilst providing a multi-national procurement option based on economy of scale.

By way of background, the HCDC will be aware of the EDA Maritime Surveillance (MAR SUR) project, which aims to create a network using existing naval and maritime information exchange systems to avoid duplication of effort, to enhance cooperation in a simple, efficient and low-cost solution for civil-military cooperation, and to support safety and security.

### Supplementary written evidence from the Ministry of Defence

*Asterisks denote that part of the written evidence which, for security reasons, has not been reported at the request of the Ministry of Defence and with the agreement of the Committee.*

1. *The timetables for the following capability investigations: (a) Wide Area Maritime Underwater Search, (b) \*\*\* (c) Long Range Search and Rescue and (d) Wider ISTAR investigation. This should include commencement date, completion date and estimated future dates for decisions on taking forward the studies' outcomes*

<i>Study</i>	<i>Commencement date</i>	<i>Completion date</i>	<i>Estimated future dates for decisions on taking forward the studies' outcomes</i>	<i>Comment</i>
(a) Wide Area Maritime Underwater Search	17 Jan 2011	31 Oct 2011	Cap DUW will conduct additional studies between now and SDSR15 to ensure the MPA debate is fully informed.	The UK MPA requirement will be owned by JFC as part of the Combat ISTAR portfolio
*** (c) Long Range Search and Rescue	***	*** 18 July 2011	***	Defence Position paper from Air RP refers-attached
(d) Wider ISTAR investigation (Air ISTAR Programme Investigation)	Jan 2011	28 Feb 2012	D JAC&T will be considering and seeking further clarification on the outcomes between now and SDSR15 to ensure the ISTAR debate is fully informed.	

2. *What pressure are maritime surveillance assets under due to other demands on the Royal Navy such as the Olympics? (Qq 134–135)*

Maritime surveillance assets currently undertake standing commitments against Op HERRICK (SKASaC), Op CHOBDAHAR in Oman (Merlin Mk 1), and a range of MT2, MT3 and MT 4 tasks. This is in addition to maintaining a requirement for Contingency through the Ready Force Task group (RFTG), part of which is forward deployed to the Gulf under Op KIPION. Op OLYMPICS is an added responsibility which is being overlaid on asset regeneration periods between either Gulf or Op HERRICK tasking, prior to deployment on roles related to maritime surveillance, reducing our ability to utilise assets flexibly to mitigate capability gaps.

With regard to defence of the UK home base or any of its Permanent Joint Operating Bases overseas, Navy Command have to make greater use of surface platforms such as the River Class patrol vessels and frigates/destroyers for short notice tasking, often to deploy at range to locate and track any incursions. Against all of this, the Merlin helicopter force is being upgraded from Mk1 to Mk2 which sees a “reverse bell curve” of availability, with its nadir of only nine a/c available from a force of 28 in mid 2013.

3. *Does the National Security Council have a role in keeping the capability gap in maritime surveillance and associated risks under review? (Q 135)*

The Strategic Defence and Security Review (SDSR) Implementation Board is chaired by the Deputy National Security Advisor. It receives updates on all aspects of implementing the SDSR, including on maritime ISTAR capabilities and the development of the National Maritime Information Centre, on a six-monthly basis before providing a summary of progress to the National Security Council (NSC).

The National Risk Assessment (NRA) and National Security Risk Assessment (NSRA) capture the most significant risks (in terms of impact and likelihood) that seriously threaten our national security interests and/or harm to people or the environment in the UK and include the most significant maritime risks. These assessments are coordinated by the Cabinet Office’s Civil Contingencies Secretariat and draw on expertise from across Whitehall and outside HMG. The NRA is reviewed annually and the NSRA biennially. Risk judgements made through the NRA and the NSRA will help to provide the context for decisions on whether there is a requirement to address the current capability gap in maritime surveillance, or whether, as now, the risk remains at an acceptable level. The NSRA informed the 2010 National Security Strategy (NSS), and we expect that it will also underpin the next NSS. As in 2010, we expect the NSC to provide direction and oversight

to shape the development of the 2015 NSS and SDSR, including through its discussion and endorsement of the NSRA.

#### 4. *Details of EU initiatives on maritime surveillance (Q 141)*

The UK has been involved in the European Defence Agency Maritime Surveillance (EDA MAR SUR) initiative for five years during which significant advances have been made in terms of interoperability and data exchange between national maritime pictures within the EU. The National Maritime Information Centre (NMIC) at Northwood continues to gain access to richer data sources and has a strong desire to continue participation in this project, with the expectation that there is close collaboration with NATO and other future Coalition Mission Network initiatives, in order to avoid duplication and absorb lessons identified. Given the success to date and the future benefits in advancing maritime situational awareness perceived by UK MOD and Navy Command across all international programmes, the UK is about to commit formally to the next, 2 year phase, of the EDA MAR SUR project.

#### 5. (a) *How much of the ISTAR assets in Afghanistan would the MoD ideally wish to bring into the core programme and how much would it cost?*

The department is currently assessing which items of equipment that were purchased as UORs it will bring into the core equipment programme and has prioritised a number of ISTAR capabilities. It is too early to define the cost of the capabilities as this is an ongoing activity as part of Annual Budget Cycle 13.

#### (b) *How much can the MoD afford to bring into the core programme and is there a perverse incentive not to take ISTAR into the core programme as the MoD cannot afford it?*

The PR12 announcement confirmed a committed core equipment programme of around £152 billion over ten years, against a total planned spend of almost £160 billion. This leaves around £8 billion of unallocated provision which could be used to bring additional capabilities—which could be new acquisitions or equipment bought as UORs—into the core programme when we are confident that they are affordable. Although precise arrangements have still to be agreed, our current assumption is that the Department will be required to fund redeployment, recuperation, and future support costs, but not to reimburse the Treasury for the original acquisition costs. Plans to take ISTAR UORs into core will be assessed alongside similar plans for other UORs, and other non-UOR capabilities on the basis of their capability priority and affordability.

#### (c) *What is the methodology that would be used to decide. (Qq 150–157)*

The methodology is an ongoing prioritisation of capability measures, based on military judgement, previous capability audits, the impact of PR12 funding decisions and emerging capability requirements. The ISTAR elements form part of the Joint Command, Control, Communications, Computing, Intelligence, Surveillance and Reconnaissance (C4ISR) input, and will be prioritised against measures initiated across the Joint, Land, Air and Maritime domains. The priority will take into account affordability and value for money.

#### 6. *Details of the Tier 1 NATO Smart Defence Initiative on maritime patrol aircraft assets (Qq 170)*

A *Tier One proposal* led by the Germans to pool and share MPA assets that could be offset or recompensed by the UK providing C130, C17 and tanker hours. The UK is not interested in this proposal because we do not have MPA assets to pool; the nations involved (Italy, Luxembourg, Poland, Portugal, Spain and Sweden) that are able provide MPA will offer aging aircraft such as the P3 Orion that does not have the requisite level of avionics or reliability to support our Deterrent and would not offer value for money in exchange for the pooling of higher grade UK capabilities. Additionally there are concerns over sovereignty (related to the Deterrent in particular) and guaranteed assurance—\*\*\*.

#### 7. *Details of the Tier 2 NATO Smart Defence Initiative on maritime patrol aircraft assets (Qq 167–169)*

A *Tier 2 proposal*—The NATO Naval Armaments Group (NNAG) investigation, led by the Canadians, to provide a long term solution by means of MPA procurement; this would provide a NATO capability akin to the AWACS model. The UK supports this proposal because it overcomes the sovereignty and assurance issues whilst providing a multi-national procurement option based on economy of scale.

#### 8. *Further details on the consideration of the impact on maritime surveillance issues of the decision not to proceed with cats and traps on the QEII class carriers? (Qq 184–187)*

The decision to revert to the F35-B Short Take-off Vertical Landing (STOVL) variant of the Joint Combat Aircraft (JCA) and remove the requirement to fit Catapults and Arrestor Gear to the QEC will have an impact on our ability to operate the full range of future air vehicles. The next generation of US Carrier launched Unmanned Aerial Systems rely on that ability for assisted launch and arrested recovery. The UK may in the future investigate the potential for alternative solutions for launching and recovering unmanned air vehicles either in the STOVL mode or through innovative arrestor solutions.

The STOVL configuration will not, in any case, preclude our participation in the sensor or data dissemination technologies employed in those air vehicles. Nor does it prevent full engagement in a range of other surveillance capabilities that may in the future be deployed in the maritime environment. The JCA STOVL variant possesses near identical sensor capability to that deployed on the Carrier version of the aircraft and the aircraft can therefore be employed with similar mission responsibilities.

9. *Details of the “informal network of Ministers under James Brokenshire” on maritime security (Qq 193–195)*

There are a number of Government departments with an interest in different elements of maritime security. Officials brief and seek decisions from their Ministerial leads on relevant developments on maritime policy and practice. Bilateral Ministerial liaison takes place on aspects of this work on a regular basis. James Brokenshire is the Home Office lead on security, and he and his predecessor have undertaken correspondence on maritime security issues with Ministerial colleagues where necessary, for example relating to the development of the National Maritime Information Centre. If required, issues of sufficient importance would be considered for referral to the National Security Council sub-committee on Threats, Hazards, Risks and Contingencies.

10. *Following on from paragraph 9.1 of the MoD’s written evidence, please set out the estimated costs for the capabilities listed and confirm they are included in the equipment programme*

Para 9.1 said The UK MOD’s maritime surveillance capabilities are delivered by a wide range of platforms and assets; for example, every RN vessel at sea carries out maritime surveillance routinely and continually. For these reasons, we cannot provide a comprehensive estimate of future maritime surveillance costs. The following programmes will, however, potentially be the major providers of our future maritime surveillance capability: the TYPE 26 Global Combat Ship, the WILDCAT helicopter, the Crowsnest airborne radar and \*\*\*. We should be happy to provide the Committee with the estimated costs for each of these programmes once we have concluded the process of bringing the Defence Budget into balance with the resources available.

The Department does not normally publish estimated project costs in advance of the main investment decision, which is usually taken at the conclusion of the Assessment Phase, as to do so could compromise our commercial position. However, for the Committee’s information only, the outline Rough Order of Magnitude (ROM) project costs have been included below:

Type 26 GCS. The project is in its Assessment Phase. \*\*\*

Wildcat Helicopter Maritime Attack (HMA). The project is in its manufacturing phase, and current acquisition costs are anticipated at £630 million over the next decade for 28 Wildcat HMA for the Royal Navy and 34 Wildcat AH delivered to the Army.

CROWSNEST. This project has not yet entered its Assessment Phase. \*\*\*

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June 2012

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**Further supplementary evidence from the Ministry of Defence**

1. *Are the dates correct for the entry of Astute and Ambush? (ie they are entering service at the same time).*

HMS Astute and HMS Ambush are both due for operational handover in Q2 2013.

2. *Why is HMS Clyde’s primary role described as Offshore Patrol rather than Maritime Security?*

HMS Clyde is classified as an Offshore Patrol Vessel and its patrol capability contributes to the wider Maritime Security of the Falkland Islands. As with Maritime Surveillance, Maritime Security is a broad concept made up of a number of complementary layers, assets, and capabilities.

3. *Would the QE Class be expected to provide the home to Merlins/Lynx helicopters rather than the Type 23/45?*

Within the construct of FF2020 it is envisaged that QE class will be the main operating platform for Merlin with other units in a task force—such as RFA, T23, and T45—being able to embark small aircraft detachments depending on the number of assets required. Lynx Mk8/Wildcat aircraft will operate from the T23FF/T45DD, with the numbers of airframes dependent on the tasking requirements.

4. *Does the C-130 and the Sentry have the same range that the MRA4 would have had without refuelling and if not what challenges must be overcome?*

	<i>C-130J</i>	<i>E3</i>	<i>MRA4</i>
Endurance	8hrs	8hrs	13hrs
Range	2400nm (10T freight)	4000 nm	6000nm

All figures shown are un-refuelled.

Points to note:

- The configuration of an aircraft will determine its range and endurance, such as whether it is in a high level transit (maximum endurance, but limited in terms of employment) or low level surface search (typical employment, but with minimum time on task).
- The capability of an aircraft will affect the level of maritime employment which can be achieved; E3-D cannot deploy a dinghy in a Search and Rescue capacity, whilst C-130 has a limited radar search capability.
- Range and endurance can be extended through achieving:
  - Air-Air refuelling. Requires the provision of a tanker, which are scarce assets.
  - On task configuration. Operating the aircraft at high or low level will affect the fuel consumption rate, but limits the degree to which the capability can be employed.

9 May 2012

#### Further written evidence from the Ministry of Defence

*Asterisks denote that part of the written evidence which, for security reasons, has not been reported at the request of the Ministry of Defence and with the agreement of the Committee.*

#### LONG RANGE SAR—DEFENCE POSITION

1. At the CDG in April, my predecessor undertook to provide the Centre view on long-range SAR following the SDSR decision not to bring Nimrod MRA4 into service. The Defence position, which has been agreed with ACDS(Ops), is that the provision of long-range SAR in support of the UK's Chicago Convention responsibilities is a civil requirement which is properly the responsibility of DfT. Deletion of Nimrod removed our ability to undertake long-range SAR as a secondary capability and no funding has been provided to enable a long-range SAR capability on another air platform. While it is recognised widely that the C130 has some limited capability, the crews are not trained and, importantly, the UK does not have sufficient C130 aircraft to establish this role without a direct impact on ops. I understand that the Department judges that the Chicago Convention does not specify the requirements for national SAR capability and I know that DfT has not sought our assistance in re-establishing a UK SAR capability equivalent to that provided by Nimrod.

2. In the event of a major incident at sea, MOD may elect to call out \*\*\* C130 aircraft to provide a response, but this would be at risk to other contingent requirements for the aircraft. The Department is clear that this aircraft is not held at readiness to perform SAR, is not equipped for the role and the crews are not trained to undertake SAR. Nevertheless, as with any emergency situation, ACDS(Ops) may need to call upon any available military asset as the situation requires.

3. Although there is no resource to deliver long-range SAR, I do recognise the practical requirement to conduct AAR trails and the potential need to provide assistance in the event of a major incident within the UK's area of responsibility. For long-range trails, duty holders will need to decide on a case-by-case basis whether the risks associated with extended oceanic transit are acceptable.

4. In the long term, the capability shortfall resulting from the deletion of Nimrod MRA4 will be considered further by the MOD. Cap DUW is leading a capability investigation which will include the wider roles undertaken by Nimrod including long range SAR. SofS has recorded his intent that we should retain the skill sets needed to rebuild an MPA capability in future should it be affordable and ACAS sought agreement from VCDS to run an option in PR11 to fund 25 seedcorn posts.

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July 2012

### Further written evidence from the Ministry of Defence

Following Mrs Moon's Parliamentary Question which was answered by Minister(DEST) on 22 March 2011, Nimrod was discussed three times by MOD and Government witnesses in the course of the open session examination of witnesses in the House of Commons Defence Committee Inquiry into The Strategic Defence and Spending Review and National Security Strategy. In each of the three cases, the focus of the discussion was the impact of the loss of Nimrod and ways that the Department has sought to mitigate the resulting capability gap. In the Department's view, discussion of WAMUS Capability Investigation, with its aim "to establish the nature and size of any "wide area" ASW capability risk, over time, and to identify and test options for mitigating demonstrable risk" would not have furthered the discussion as the Committee was focused on what the Department was currently doing to mitigate the gap, rather than the long-term implications or requirements. As the answer of 22 March indicates, there was no intention on the Department's part to conceal this study, though its classification, and the fact that it was still ongoing, would have made it hard for us to provide details at that time. As the results of the WAMUS CI were not published until 31 October 2011, so all that MOD and Government witnesses could have done was reiterate Minister(DEST)'s answer to Mrs Moon's Parliamentary Question.

Below are the extracts from Hansard and the official transcripts of the evidence sessions from the HCDC Inquiry into the SDSR and NSS.

PARLIAMENTARY QUESTION: HANSARD EXTRACT, (22 MARCH 2011: COLUMN 947W)

**Mrs Moon:** To ask the Secretary of State for Defence what plans the Royal Navy has for the purchase of maritime patrol aircraft. [47975]

**Peter Luff:** The Ministry of Defence is currently conducting a capability investigation into its long-term requirements for a wide area maritime surveillance capability, which will report in September 2011. We currently have no plans to procure a maritime patrol aircraft.

HCDC INQUIRY INTO THE SDSR AND NSS (PUBLISHED 3 AUGUST 2011)

**Wednesday 11 May 2011, EV42, Q206 Mr Donaldson:** Before I leave the RAF, has the loss of Nimrod had any impact on this?

**Air Chief Marshal Sir Stephen Dalton:** The availability of Nimrod would of course have helped, in some of the early stages, in securing the northern coastal waters of [Libya]. It could have been deployed there very quickly. It could be maintained there, because it is a long-range, long-endurance aeroplane, and it had the sensor suite that would have allowed us to have the perfect picture. Did it mean that we did not know what was going on? Did it mean that we did not have other assets or other nations with assets that we could combine with? No. But Nimrod would certainly have been—is—very important. We could have deployed it and it would have been very useful there.

**Wednesday 11 May 2011, EV49, Q241 John Glen:** I would just like to draw the attention of the Air Chief Marshal and the Admiral to the comments to the Committee of the MoD's Permanent Secretary, when she said, "I do confirm that we have removed a capability, and that increases the risk that we take"—referring to the decision on the MRA4—"However, we mitigate that risk by the range of the other things that we do". What actions have been taken to address that risk?

**Air Chief Marshal Sir Stephen Dalton:** First things first—I think that the acknowledgement there that a capability has been removed is absolutely right as an entity, but we have then done as much as possible to try to make sure that the risks that have been taken by removing that capability are mitigated as much as possible. I will give you three or four examples and, no doubt, CNS might give you one or two more. In support of operations and submarine activity, the Navy are making greater use of frigates and of their Merlin helicopters to protect the sea lanes and prosecution of identification and attacks on submarines. In terms of long-range search and rescue, you will recall that about three or four months ago, a fairly major drilling rig in the North Sea was breaking its anchors and breaking loose. What we did there was to launch one of the E-3D command and control radar aeroplanes that definitely acted as the co-ordinator and control of the search and rescue efforts that were needed to bring the crew off, and we have the ability out of the back of our Hercules to launch life rafts into the sea to provide that sort of capability, if that becomes necessary. Those are the sorts of actions we have taken to mitigate that risk, but it is not an entire fabric of the capability that was within the Nimrod; we can do a certain amount, not all of it.

**Admiral Sir Mark Stanhope:** The Chief of the Air Staff has covered some important issues here. The loss of the risk can be mitigated against under the current threat levels that we are expecting to envisage and we are into security areas here which I do not want to go into. So we can mitigate in terms of the delivery of the strategic deterrent as well as in terms of the force protection of deployed task groups.

**John Glen:** In terms of, say, counter-piracy or deepsea, air-sea rescue, are we going to be left short? You already said at the start that you only had two ships available to you at any one time—is it credible to say that these risks are going to be fully mitigated by the actions you have available to you?

**Admiral Sir Mark Stanhope:** An area we have not covered, of course, is that “dependency” was a feature of the debate on the SDSR and here is an area in which—in terms of your anti-piracy example—we will have to rely a lot more on our allies than we have in the past. Those sovereign areas of capability where we and we alone can be responsible for the delivery of the capability, that risk area which is principally focused, of course, around protection of our own task group, should we want to use that task group independently, or, indeed support a strategic deterrent, have to be mitigated against the threats that we are likely to come up against.

**John Glen:** Do you think we are in a position to mitigate those risks? You feel that you have the capabilities required to do so?

**Admiral Sir Mark Stanhope:** I think, in the scenarios we are likely to come up against now or in the near future, we can do that, but that is a time-limited answer because if risks increase dramatically because of circumstances, we will not be well placed.

**Chair:** What could the lack of a floating, sovereign airbase mean to our defence capabilities?

**Admiral Sir Mark Stanhope:** We have moved on from Nimrod.

**Chair:** Yes, we have.

**Wednesday 22 June 2011, EV111, Q597 Bob Stewart:** Let us turn to the decision to remove Nimrod MR4, its consistency with supporting a nuclear deterrent and its other roles, such as obtaining strategic intelligence, and its involvement in stabilisation operations, such as anti-piracy patrols. Do you agree with the decision? I know that we’ve done it and it must have been one of the most difficult decisions of all, but it seems that we’ve put a bit of a hole in the strategic nuclear deterrent for example—a bit of a hole.

**General Houghton:** It would be fair to say that among the Chiefs of Staff and in the military advice, it was one of the most difficult decisions to come to terms with, because it has multiple uses. It was made easier by the fact that there were still some residual challenges—there is still a bit of a debate about that—so it was not a capability in hand but one that was promised downstream. There was still a significant amount of money involved in bringing it into service and then running it. It was a difficult decision for the Chiefs of Staff to support because of its multiple uses, but the ultimate judgment was that there was manageable risk in all those areas of use, including deterrence, where you know there are several layers to it—not for discussion in open session.

**Q598 Bob Stewart:** And to take it away from the front edge, this is something that the French might help us with—he says wryly.

**General Houghton:** I would not want to comment in this forum.

**Bob Stewart:** I am sure. The intention is that perhaps the French could help us or we will have alternative ways of doing it. I know we cannot go further here.

**Chair:** The Vice Chief does not want to comment in this forum on that issue. I think we will move on.

July 2012

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**Written Evidence from Dr Lee Willett, Senior Research Fellow, Maritime Studies  
Royal United Services Institute**

1. INTRODUCTION

1.1 *British Maritime Doctrine: BR1806* defines surveillance as “the systematic observation of the aerospace, surface and sub-surface areas, places, persons or things by visual, aural, electronic, photographic or other means”.<sup>1</sup>

1.2 A maritime surveillance capability consists of coverage of the air, surface and sub-surface environments and requires fusion of a number of different capabilities and information sources.

1.3 As well as including three different environments (air, surface and sub-surface), one unique dimension of the maritime environment is that the sea is never static (mandating a different kind of surveillance capability) and, moreover, craft which use the sea are rarely static either.

1.4 Surveillance requirements are driven by the nature of the area to be surveilled and the level of assurance and accuracy of information required. However, given the very dynamic nature of the maritime environment, generally a number of different capabilities and assets are required to bring together a comprehensive picture.

2. UK REQUIREMENT

2.1 There is a UK requirement for persistent global surveillance capability.

2.2 In this context, the requirement for sufficient maritime capability is driven by:

- the fact that the UK is an island nation with significant maritime borders and domestic territorial waters;

- the UK has global interests to support, as well as Overseas Dependent Territories (some of which have significant maritime environments to secure) it must secure;
- the UK deploys its Armed Forces and other tools of government globally on a daily basis;
- significant proportions of the world’s oceans remain ungoverned spaces, and potential adversaries recognise the benefits of moving men and materiel by sea (something which can be done more easily than by land or air); and
- increasing surveillance requirement for wider range of activities, eg security of commercial shipping broadly and in the particular context of counter-piracy.

### 3. THE STRATEGIC DEFENCE AND SECURITY REVIEW (SDSR) AND MARITIME SURVEILLANCE

3.1 From the UK’s perspective, one of the most significant developments in maritime surveillance in recent years has been the decision taken under SDSR to cancel the Nimrod MRA4 maritime patrol aircraft (MPA) programme.

3.2 Despite this decision, SDSR had stated that the future security environment the UK would face would “place a premium on particular military capabilities, including intelligence, surveillance, targeting acquisition and reconnaissance (ISTAR).” SDSR did not explain the decision to withdraw Nimrod, stating simply that the UK would “not bring [the MRA4] into service”. SDSR adds that maritime capabilities for the UK will include “maritime intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capabilities based on network enabled warships, submarines and aircraft”. Does the Government’s reinforcement of the need for ISTAR capability while not explaining why an MPA did not meet this requirement raise the possibility that SDSR left the door open for an off-the-shelf purchase in due course?<sup>2</sup>

3.3 Given the central role of surveillance requirements in supporting operations at sea, as demonstrated subsequent to SDSR in operations in Libya (please see below) and given the cancellation of Nimrod in SDSR, the concerns about this lack of capability are reflected in the HCDC’s own report on the Libya campaign and its comment that it expects the UK “to give a higher priority to the development of such capabilities in advance of the next SDSR”.<sup>3</sup>

3.4 The challenges in maintaining effective maritime surveillance in UK waters are relevant across the spectrum of operations.

3.4.1 At the top end of the spectrum, cuts in UK naval and wider maritime assets have raised questions about the UK’s ability to provide security for its independent strategic nuclear deterrent. Anti-Submarine Warfare (ASW) is central to the protection of the deterrent. ASW is a layered capability, with nuclear-powered attack submarines (SSNs), surface ships (such as a Type 23 Duke-class frigate with a towed array sonar) and MPAs. With Nimrod cancelled, with just seven SSNs in the flotilla having to meet a growing number of requirements and with the Libya operation (for example) demonstrating the extent to which the UK’s surface flotilla is overstretched, this raises the question of whether increased risk is being taken with the security of the deterrent.<sup>4</sup> The reported presence of a Russian SSN in UK waters the week SDSR was announced highlights this point.<sup>5</sup>

3.4.2 The key issue relating to Nimrod, however, is not necessarily providing a new MPA and to provide security in UK waters only, but providing the capability to meet the UK requirement for persistent wide-area maritime surveillance, especially on a much broader global scale—with opportunities to use such capabilities at distance from the UK including not only high-end operations such as Libya but also a range of other tasks such a counter-narcotics and counter-piracy operations.<sup>6</sup>

### 4. LIBYA AND MARITIME SURVEILLANCE

4.1 Libya—a good example of the importance of persistent surveillance, but also of the gaps in UK and other nations’ capabilities.

4.2 Maritime surveillance played a central role in contributing to all elements of the UN-led operation: the establishment of an arms embargo, a cease-fire, a no-fly zone and unimpeded access to provide humanitarian assistance.

4.2.1 Arms embargo—Royal Navy surface ships and submarines brought a range of surveillance capabilities.

4.2.2 Cease-fire/no-fly zone—UK surface ships, operating close in to the coastline, were regularly involved in providing targeting and other information on targets ashore and the movement of Libyan forces.

4.2.3 Humanitarian assistance—regime forces attempted to mine maritime access routes to key ports such as Misrata. In one instance, a UK SSN identified Libyan craft attempting to lay mines, passed on the information to a UK surface ship which cued in an Apache helicopter to destroy the targets.

4.3 To what extent would an MPA or other surveillance capabilities have been able to make a significant contribution to supporting the UK contribution to the operation? The requirement for a range of wide-area surveillance suggests that the capability provided by Nimrod aircraft would have had significant utility.

Unmanned Aerial Vehicles could also have played a central role. A lesson identified from Afghanistan was the importance of unmanned aerial vehicles in delivering persistent and assured surveillance capability.

4.4 One notable development from the UK's perspective in the Libya campaign was the contribution of the newly-established, multi-agency National Maritime Information Centre (NMIC) at Northwood in providing joined-up maritime situational awareness.<sup>7</sup> NMIC currently is an information fusion centre, but to what extent can it evolve into a decision-making centre in the future?

4.5 A large part of the enabling capability for the operation, including tanking, logistics and Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) capabilities were provided by the United States (US). Given the requirement for European Union (EU) and non-NATO European nations to contribute to future coalitions where the US contribution may be reduced, to what extent should these nations seek to invest in such capabilities? There is an argument too that providing such capabilities to a coalition operation brings significant political leverage for those providing such capabilities.

## 5. KEY DEVELOPMENTS AND IMPLICATIONS

5.1 There has been much discussion in the UK in recent years about the need to develop a cross-Government maritime security strategy. Maritime surveillance requirements and capabilities should be a central part of any such strategy.

5.2 There has been discussion of how maritime surveillance capabilities can help to provide security in London and elsewhere for the 2012 Olympic Games. This presence will be based around the Landing Platform Helicopter (LPH) ship HMS OCEAN and the Landing Platform Dock (LPD) HMS BULWARK. Both platforms have the capacity to carry: a range of helicopter capabilities; personnel drawn from Royal Marines, other services and other government departments; and command and control capabilities. Shore-based assets such as NMIC will play a fundamental role in co-ordinating and fusing information.

5.2.1 Some analysis has suggested that the persistent wide-area surveillance such as that provided originally by Nimrod would play a critical role in the layered coverage required for delivering "upstream security" for the Olympics, ie at distance from the UK.<sup>8</sup>

5.3 There is the question of to what extent UAVs or commercial manned aircraft can provide the aerial capability the UK needs for maritime surveillance. The use of commercial aircraft for such tasks is becoming increasingly popular as a procurement option, for example to meet Urgent Operational Requirements (UORs). A cheaper alternative to UAVs, these aircraft can be leased off-the-shelf. However, they do not have the persistence of a UAV. Future technologies may include blimps. One issue to address is whether future UK aerial maritime surveillance requirements can be met by one asset only, or whether a combination of assets will be required.

5.4 To what extent can any gaps in UK capabilities be provided by sharing and drawing on feeds from other nations? Intelligence is critical here. The UK has an established history of sharing intelligence information with very close allies such as the US, but the question remains as to whether the UK could expect to be able to share intelligence as closely with other nations.

5.4.1 Partnerships, in particular with the US and Europe, are key to the provision of space-based maritime surveillance for the UK. Commercial satellite capabilities also exist.

5.4.2 However, relying on partners to provide capability carries additional risk, as partners might have other priorities for their own capabilities.

5.4.3 In the context of UK-France bilateral discussions about defence research, technology and capability co-operation, the focus on unmanned systems, communications and reconnaissance capabilities demonstrates clear possibilities for developing maritime surveillance capabilities together.

5.4.4 Recent years have seen a significant increase in the EU's focus on developing maritime surveillance capability.<sup>9</sup>

5.5 In terms of commercial shipping, Automatic Identification System (AIS), Long Range Identification and Tracking (LRIT) and white picture capabilities help the UK to monitor traffic movement and patterns. LRIT, with information provided by satellites via a web-browser, provides visibility of all UK-registered ships over 300 GT wherever they are in the world. A coastal version of LRIT also is available, and can provide the UK to assess what ships are present at any given moment out to 400 nm of the UK coast. This system is not currently used, however, as all EU nations use the EU Data Centre, European Maritime Surveillance Agency, Lisbon.

5.6 There is an increased interest in the UK in shore-based active and passive array radars. Such capability can be very useful in monitoring areas as far out as the borders of the UK's Economic Exclusion Zones. Some shore-based radar and satellite systems (for example, operated by the UK's Maritime and Coast Guard Agency) can monitor UK waters for evidence of pollution.

5.7 A particular challenge for maritime security, as well as indeed in other environments, is collating, processing and then responding to the large amounts of data which can be collected from different sources.

5.8 The UK has a requirement for persistent maritime surveillance capability both in UK waters and to secure UK interest and activities overseas.

- 5.8.1 The requirement, thus, is for the UK to have dedicated, wide-area capabilities. Other capabilities can contribute to this requirement, but drawing assets from other sources raises questions about their availability and also whether they provide the right capability for providing surveillance of the maritime environment.
- 5.8.2 When operating outside UK waters, the units concerned are able to provide surveillance of specific areas only. Both at home and in UK waters, the real gap remains in wide area surveillance. Given the requirement for maritime surveillance and the reducing number of assets the UK has, the UK capability is overstretched. Given the requirement for UK forces such as the Royal Navy to be responsive in support of government policy, this also risks leaving gaps in the UK's ability to cover its standing commitments. After all, no matter how capable and how networked, an asset cannot be in two places at once. Also, given the number of assets listed below, does the UK have enough ships to deliver assured maritime security in its own waters?

#### UK CAPABILITIES<sup>17</sup>

All the UK's maritime platforms have the potential to be used to gather information, and the forward-deployed nature of many of these assets allows them to make a sustained strategic contribution to surveillance, intelligence and information-gathering. This sustained forward presence provides a pro-active capability. Maritime forces can also be deployed quickly to provide a reactive capability for providing surveillance.

It should be noted that there is a difference between ships and submarines which have surveillance capabilities, and those which are used specifically for surveillance tasks. While ships and submarines will have capabilities which would enable them to surveil their operational environment, in not all cases is surveillance the primary function of the platform.

This list details UK maritime capabilities for which surveillance is a primary function, other assets and capabilities which are used for maritime surveillance and those which could be. However, it should be noted that capability for maritime surveillance is difficult to replicate with assets designed to provide land-based surveillance, as the sea is a constantly-moving medium and requires a different surveillance specification.

The critical capability gaps, as demonstrated by the list below, are persistent wide area surveillance and numbers of assets. The persistent wide area surveillance gap exists because of the withdrawal of Nimrod: other assets being used to plug this gap, yet none provide the same coverage.

#### ROYAL NAVY

##### *Destroyers and Frigates*

- 13 Type 23 Duke-class frigates.
- Six Type 45 DARING-class destroyers with Sampson radar. Significantly improved air surveillance capability, with Sampson multi-functional phased array radar, for both close-in and longer-range surveillance.
- 2087 sonar on both the Type 23 and Type 45.
- With the four BROADSWORD-class Type 22 Frigates being withdrawn from service under SDSR, the UK will lose the full spectrum Signals Intelligence (SIGINT) installed on these ships as well as four towed-array sonar platforms.
- In terms of maritime security in UK waters, nominally two surface ships are allocated to the Fleet Ready Escort Ship (FRES) task, with one ready to deploy at 24 hours' notice and one at 48 hours. Several press sources have noted that, recently, the UK FRES task was gapped for the first time in 30 years.<sup>10</sup> Demonstrating the importance of the FRES task, two SHEFFIELD-class Type 42 destroyers deployed on FRES tasking, HM Ships YORK and LANCASTER, were both despatched in recent months to shadow the Russian aircraft carrier Admiral Kuznetsov and its battlegroup as it transited close to UK waters.

##### *Submarines*

- Seven ASTUTE-class SSNs, replacing the TRAFALGAR-class (of which five remain in service).
- 2076 sonar.
- Surveillance is a core task for SSNs, from strategic down to tactical levels.

<sup>17</sup> Sources: International Institute for Strategic Studies (IISS). *The Military Balance 2011*. London: Routledge (Taylor & Francis Group). London: IISS. 2011. pp.157–161; Norman Friedman (2006), *The Naval Institute Guide to World Naval Weapon Systems*. 5th Edition. Annapolis, MD: Naval Institute Press; Eric Wertheim (2007). *The Naval Institute Guide to Combat Fleets of the World*. 15th Edition. Annapolis, MD: Naval Institute Press. Data on the airborne contribution to the UK's maritime surveillance capability also was provided by Elizabeth Quintana (Senior Research Fellow, Air Power and Technology, RUSI).

### *Helicopters*

- 42 Merlin HM Mk1 ASW helicopters (one is deployed on each Type 23, and up to four can be carried on the UK's current flagship HMS ILLUSTRIOUS).
- Sea King Airborne Surveillance and Control (SKASaC) AEW Mk7 SKASAC helicopters with Searchwater 2000AEW pulse-doppler search radar.<sup>11</sup> Due to be replaced 2018–2022 under the Crow's Nest programme.
- 71 Lynx Mk3/MK8 ASW—localised surveillance.
- Of these aircraft, only the SKASaC capability provides wider area coverage previously provided by Nimrod, and this coverage is limited. This capability may also be gapped in the medium-future if the SKASaC capability is withdrawn before the Crow's Nest programme delivers the next generation capability.

### *Mine Counter Measures Vessels*

- SANDOWN- and HUNT-class minesweepers, which provide a unique sub-surface surveillance and reconnaissance capability.
- Proved to be very effective off Libya (SANDOWN-class MCMV HMS BANGOR and HUNT-class MCMV HMS BROCKLESBURY).
- To be replaced by a single class of ship under the Mine Hunter and Patrol Craft (MHPC) programme.

### *Patrol Ships*

- Three x River-class patrol ships (MERSEY, TYNE and SEVERN). Fishery protection and UK-wide maritime security, out to mid-Atlantic (except Scotland, where Marine Scotland provides protection).

### ROYAL AIR FORCE/BRITISH ARMY

- The RAF's six E-3D Sentry AWACs, four Sentinel RMK1 aircraft and Reaper unmanned vehicles are all assets which could be used for maritime surveillance, but the question is whether they provide the same specifications in capability.
- Rivet Joint SIGINT capability. SDSR stated that Rivet Joint will have "global independent strategic intelligence gathering" capability.<sup>12</sup>
- Watchkeeper (a British Army Unmanned Aerial Vehicle): press reports have suggested that the French Army—should they procure Watchkeeper, which they are reported to be interested in doing—believe that Watchkeeper could be operated from ships to complement the French Navy's new NH Industries NH90 maritime helicopters and increase its surveillance capacity.<sup>13</sup> Given the prospective areas of Anglo-French bilateral capability co-operation, converting Watchkeeper for such purposes is perhaps one project which could be considered under this arrangement.

### UK BORDER AGENCY

- Five x offshore patrol cutters (four x 42m, one x 36m). Primarily able to operate in territorial waters and the contiguous zone but can be used as far out as covering the whole of the UK's Economic Exclusion Zone (EEZ). Have been used in fisheries patrol also. Unarmed, but can operate in conjunction with UK military. Can also be supported by contracted aerial surveillance.
- Access to on-call maritime aerial surveillance assets through contracted support.

### MARITIME & COAST GUARD AGENCY

- Sea King Search and Rescue helicopters at four bases (two in Scotland, two in the English channel).
- Five small boats and one Rigid-Hull Inflatable Boat (RHIB). Each fitted with radar and AIS. Deploy only when called on, and have short range (maximum 60 nm from safe haven).
- Fixed wing surveillance aircraft, hired on the commercial market. Such aircraft have both radar and electro-optical surveillance capabilities. Assets often are hired to verify information picked up via satellite.
- A range of shore-based capabilities for monitoring safety at sea.
- Occasional hydrographic work, which would enable limited surveillance of sub-surface environment.

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- <sup>6</sup> A number of nations are providing MPA capabilities for counter-piracy operations in the Horn of Africa.
- <sup>7</sup> Julian Miller (Deputy National Security Adviser, Cabinet Office). Speech to RUSI Future Maritime Operations Conference, 6 July 2011.
- <sup>8</sup> See Charles Strathdee, “Olympics 2012: Case Studies in Terror”, in Warships International Fleet Review, February 2012. St Leonard’s-on-Sea: HPC Publishing. p.18.
- <sup>9</sup> See, for example: Security and Defence Agenda (SDA) (2007). The Questionmarks over Europe’s Maritime Security’. Discussion Paper. Brussels: SDA.
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- <sup>11</sup> The wide area surveillance variant of Searchwater was due to come into service with the Nimrod MRA4 aircraft.
- <sup>12</sup> SDSR, p.26, para.2.A.10. In the interim, UK SIGINT capability is provided by the Seeker capability.
- <sup>13</sup> Murdo Morrison, “France’s DGA Outlines Army Interest in Watchkeeper”, in [www.flightglobal.com](http://www.flightglobal.com), 22 February 2012. Available on-line at: <<http://www.flightglobal.com/news/articles/frances-dga-outlines-army-interest-in-watchkeeper-368643/>> . Accessed 7 March 2012.

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