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NATO's Next Consortium: Maritime Patrol Aircraft

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The new security challenges to Europe's north, east, and south are multifaceted and include important maritime elements. In order to successfully tackle these new security challenges, NATO's member states must regenerate high-end maritime capabilities, including the ability to conduct anti-submarine warfare (ASW) and surface warfare. In particular, NATO must broaden and enhance maritime domain awareness (MDA) on, above, and below the surface. This capability is what enables the Alliance's efforts at sea, be it high-intensity ASW or monitoring the ocean for smugglers and pirates. However, due to the priority given to expeditionary counter-insurgency operations over the last decade, coupled with defense austerity across the Alliance, NATO allies have allowed these capabilities to decline over the last twenty years.

Airborne systems to provide MDA, and maritime patrol aircraft (MPAs) in particular, stand out among the most important and urgent of these maritime requirements. Maritime patrol aircraft fulfill a number of roles, from high-end Anti-Submarine Warfare and Anti-Surface Warfare (ASuW) to maritime Intelligence, Surveillance, and Reconnaissance (ISR), and search and rescue at sea. NATO members must now recapture these capabilities and invest in a robust maritime patrol aircraft fleet. Given the rising costs of sophisticated defense systems, a group of NATO members should create a maritime patrol aircraft consortium, which could include a high to low range of platforms, as well as basing and maintenance arrangements. The maritime challenges facing NATO may differ from south to east to north, but maritime patrol aircraft that can perform ASW, ASuW, and contribute to enhanced maritime domain awareness is a capability that is needed across the Alliance.

A consortium of this kind around maritime patrol aircraft would not only contribute to collective defense and deterrence in Europe by

fulfilling an urgently needed requirement, but would also serve important political and strategic purposes. It would showcase, in a very tangible way, that NATO nations from the south and north can work together to accomplish significant things at a time when many worry that the Alliance's members cannot agree on threat perceptions and priorities. Delivering a major capabilities initiative would also send a powerful message to an assertive Russia that NATO is truly preparing itself to take on the new security challenges in Europe. It would also give a persuasive boost to the idea of effectively coordinating and sharing defense resources; a concept often maligned, but more important than ever given scarce resources.

The Contested and Turbulent Maritime Domain

The two major drivers of Europe's newly insecure strategic environment both have reflections in the maritime domain: Russia's military assertiveness is often expressed above, on, or under the sea; and the instability of the Middle East and North Africa spreads turbulence and disorder around the Mediterranean's southern rim.

In this context, the emerging Russian sub-surface challenge deserves special attention, as it is one of the most difficult threats with which allied maritime forces must contend. Furthermore, sub-surface activity has become one of the key ways to prod and test the readiness and response of NATO and its partners. Over the last two years, Finland, Sweden, and the United Kingdom (UK) have all launched anti-submarine warfare operations off their coasts in pursuit of suspected Russian submarines. For the UK operation, France, Canada, and the United States contributed MPAs to the search for the suspected submarine.[1] NATO's Maritime Command also recently reported that Russian submarine activity in the North Atlantic now rivals that seen during the height of the Cold War.[2] Russia is also using its submarines and intelligence-gathering ships to "aggressively operate near the vital undersea cables that carry almost all global Internet communications," with clear implications for the security of communications in peacetime, and connectivity during a crisis or wartime.[3]

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The maritime challenge, including the Russian sub-surface threat, is also growing in NATO's north. Russia's northern fleet, based in Murmansk on the Kola Peninsula, has received a significant portion of the naval modernization resources, made available by the military transformation effort launched in 2008. Furthermore, Russia's submarine-based nuclear deterrent resides in the northern fleet, close to alliance territory. Finally, Russia's recently revised maritime strategy emphasizes the Arctic and clearly states a need for access to the broader Atlantic for Russia's maritime forces. This brings the focus back to the Greenland-Iceland-UK (GIUK) gap, which served as an important naval choke point for NATO in order to halt a Soviet maritime advance into the Atlantic during the Cold War. Then, the GIUK gap was patrolled by maritime patrol aircraft, surface warships, and submarines, and included an advanced sensor chain to detect and track Soviet submarines. Much of this capability lapsed after the end of the Cold War, as the Alliance turned to more expeditionary tasks. This challenge was recently highlighted by SACEUR General Philip Breedlove during testimony before the US Senate.[4]

Submarines are the "capital ships" of the Russian Navy, and Russia is seeking to further bolster its sub-surface capabilities, with new generations of conventional

1 Thomas Gibbons-Neff, "With no sub-chasing aircraft of its own, UK calls in allies to help find Russian submarine," *Washington Post*, November 22, 2015, https://www.washingtonpost.com/news/checkpoint/wp/2015/11/23/with-no-sub-chasing-aircraft-of-its-own-uk-calls-on-allies-to-help-find-russian-submarine/.

2 Nicholas de Larrinaga, "Russian submarine activity topping Cold War levels," *Jane's Defence Weekly*, February 2, 2016, http://www.janes.com/article/57650/russian-submarine-activity-topping-cold-war-levels.

3 David Sanger and Eric Schmitt, "Russian Ships Near Data Cables Too Close for US Comfort," *New York Times*, October 25, 2015, http://www.nytimes.com/2015/10/26/world/europe/russian-presence-near-undersea-cables-concerns-us.html?_r=0.

4 Richard Lardner, "US Commander Says Tracking Russian Subs is Key Challenge," CNBC, March 1, 2016, http://www.cnbc.com/2016/03/01/the-associated-press-us-commander-says-tracking-russian-subs-is-a-key-challenge.html.

French maritime patrol aircraft participating in NATO's anti-submarine warfare exercise Dynamic Mongoose 2015. *Photo credit:* NATO.

and nuclear propulsion submarines, which promise to be significantly more difficult to detect and track for western naval forces. This includes the Yasen, Lada, and Kalina classes of submarines.[5] In recent times, Russia has also demonstrated its growing capability to perform land attack missions with submarines. In December of 2015, a Russian submarine in the Mediterranean fired Kalibr missiles against land targets in Syria.[6]

NATO is also facing emerging anti-access/area-denial challenges, which have been highlighted by SACEUR General Breedlove and others over the last eighteen months. An important component of the A2/AD challenge is Russia's sub-surface fleet, which could endanger, or make impossible, NATO reinforcement from the sea, or allied maritime operations in a given sea space. The extension of Russian A2/AD "bubbles" is not only an issue in the High North and in the Baltic sea region, it is also very much an emerging challenge in the eastern Mediterranean, where land-based Russian surface-to-air and surface-to-surface systems in Syria could be combined with submarines from Russia's Black Sea fleet to form a potent threat against NATO air and maritime operations in the region.[7] Indeed, denying the use of maritime spaces is fundamental to any A2/AD strategy.[8] Thus, high-end MPAs must be part of the solution to the A2/AD problem, in order to ensure access to maritime spaces for allied forces and the ability to effect reinforcements from the sea.

5 Office of Naval Intelligence, *The Russian Navy*, Washington, DC, December 2015, pp. 16-19.

6 Christoper Cavas, "Russian Submarine Hits Targets in Syria," December 9, 20015, Defense News, http://www.defensenews.com/story/breaking-news/2015/12/08/submarine-russia-kalibr-caliber-cruise-missile-syria-kilo/76995346/.

7 See Jonathan Altman, "Russian A2/AD in the Eastern Mediterranean," *Naval War College Review*, Newport, RI, Winter 2016, vol. 69, no. 1, pp. 72-86.

8 See, for example, Sam Tangredi, *Anti-Access Warfare: Countering A2/AD Strategies*, Naval Institute Press, 2015.

The maritime domain to NATO's south, in and around the Mediterranean, also continues to be turbulent in the wake of the Arab Awakening. This has a direct impact on European security, as refugees, migrants, and smuggling networks use the maritime domain to gain access to the European mainland. NATO's maritime role in the south is also growing, with the recently announced mission in the Aegean to support Turkey, Greece, and the European Union (EU) being the likely harbinger of more to come. Furthermore, nonstate groups have proven themselves increasingly capable of attacking targets at sea, using crude anti-ship missiles. ISIS-affiliated militants attacked an Egyptian warship in 2015, while Hezbollah attacked an Israeli corvette in the Mediterranean in 2006. Thus, NATO and its allies face a growing need for better maritime domain awareness in the Mediterranean as well.

Maritime Patrol Aircraft in Europe

The European maritime patrol aircraft fleet has been greatly reduced in numbers since the end of the Cold War, and is aging quickly. It is one area where allies have consistently underinvested, to preserve ever more scarce defense resources, in order to direct them to requirements made urgent by operations in the Balkans, Afghanistan, and elsewhere. Indeed, the United Kingdom retired its entire maritime patrol aircraft capability with its 2010 Strategic Defense and Security Review (SDSR). That the UK's most recent SDSR, in 2015, clearly stated a need to regenerate a fixed-wing MPA capability is grounds for cheer.

But Britain is far from the only country that has let its maritime patrol capability slip over the last two decades. The Netherlands retired its fleet of P-3 MPAs in 2003, when faced with budget pressures. The Dutch P-3s were then sold to Germany, when Berlin scrapped its plans to recapitalize its MPA fleet in a joint project with Italy, due to cost concerns. The Canadian government cancelled its plans for new MPAs in 2007, opting instead to upgrade some its current Aurora aircraft. Greece cancelled its pursuit to replace its P-3 fleet in the wake of the Euro crisis and mothballed its MPAs, but is now looking to modernize its existing fleet in response to the refugee crisis in the Mediterranean. France was forced to reduce its ambitions to modernize its fleet of Atlantique MPAs, by only upgrading fifteen out of its fleet of twenty-two aircraft.

The United States still operates a considerable MPA fleet, which is currently being modernized with new P-8 Poseidon planes and Triton UAVs, but the presence of US MPAs in Europe has shrunk considerably over the last two decades. The US MPA fleet in Europe has dwindled from two entire squadrons to five planes for the entire continent.[9] In 2006, the United States also shuttered its Keflavik base in Iceland, which had been one of the main hubs for US MPA operations in Europe; although this loss may, to some degree, be reversed by the upgrading of Keflavik infrastructure to allow for the rotational presence of P-8s—a decision that was announced in early 2016.[10] On top of the current reductions, the European MPA fleet is set to shrink another 50 percent by 2020, if individual NATO members and the Alliance do not begin to reverse the trend. Indeed, the lack of MPA capabilities has already made itself felt. During OPERATION UNIFIED PROTECTOR, NATO's air campaign over Libya in 2011, the Alliance managed to muster only three MPAs, meaning that the operation lacked twenty-four hour surveillance coverage of the North African littorals. In the words of the RAF Chief of the Air Staff, with so few MPAs, NATO struggled in "securing the northern coastal waters of Libya."[11]

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All in all, NATO's European members and Canada currently operate roughly ninety MPAs with varying capabilities. This number may seem large at first glance, but with the maintenance needs of mothballed aircrafts, training periods, and crew needs considered, no more than a quarter of those aircraft are available at any one time for operations. They also need to cover, in principle, an entire continent with major sea spaces in the Mediterranean, the Black Sea, the North Atlantic, and the Baltic Sea.

9 William Perkins "Is NATO's MPA force prepared for resurgent Russian submarine patrols?" *Journal of JAPCC*, Winter 2015, pp. 29-35.

10 Gerard O'Dwyer,, "US Navy in Talks to Use Iceland's Keflavik Air Base Again," Defense News, February 23, 2016, http://www.defensenews.com/story/defense/2016/02/18/us-navy-talks-use-icelands-keflavik-air-base-again/80561786/.

11 Karl Mueller, (ed.), Precision and Purpose: Airpower in the Libyan Civil War, RAND, 2015, pp. 178-180.

Russian Yasen-class nuclear attack submarine during sea trials. *Photo credit:* Russian Navy.

However, the end of the Cold War and NATO's transition to expeditionary operation does not mean that Europe's remaining maritime patrol aircraft have been idle in their hangars since the 1990s. They have been frequently used in operations, such as counter-piracy and maritime counter-terrorism efforts under an EU, NATO, or coalition flag.[12] The US MPA fleet has also been drawn away from its core mission to support ISR operations over Iraq and Afghanistan over the last decade. While MPAs have made valuable contributions to those missions, it has meant that MPA crews and units have primarily focused on comparatively low-end tasks, and other demanding, but different ISR taskings, with less time and fewer resources for training and exercises designed to prepare them for ASW and ASuW against a sophisticated adversary.[13]

The emerging security environment lays bare the urgent need to regenerate maritime patrol capabilities in Europe and more broadly enhance not only anti-submarine warfare but also maritime domain awareness across the maritime domains in and around Europe. At a time when the Alliance is experiencing fractured threat perceptions between the east, north, and the south, this is one area where many allies share a need for similar capabilities, if not for the same reasons.

However, upgrading and recapitalizing the European maritime patrol capabilities will not come cheap. There is a range of manned and unmanned solutions available, with vastly improved capacities and capabilities over the platforms currently being operated in Europe. But they all come with a significant price tag, ranging from $120 million for a high-end unmanned model, to nearly a quarter of a billion dollars for the latest manned multi-role platform.

12 NATO, "Pooling Maritime Patrol Aircraft," December 18, 2012, http://www.nato.int/cps/en/natolive/news_93218.htm.

13 William Perkins, "Is NATO's MPA force prepared for resurgent Russian submarine patrols?," *Journal of JAPCC*, Winter 2015, pp. 29-35.

Table 1. MPA fleets across NATO

Country	Type	Operational	Year introduced	Notes
United Kingdom	Nimrod MRA4	0	N/A	Project cancelled with 2010 SDSR
Greece	5 P-3A/B Orion	0	1993	All in store since 2009
Spain	5 P-3B, 8 CN-235	13	P-3: 1989, CN-235: 1988	P-3B purchased from Norway in 1989
Portugal	5 P-3, 5 CN-295	10	P-3: 1981, CN-295 2008	Entered Portugese service in 2006, procured from the Netherlands
Italy	ATR72	2	2016	Currently being introduced, with total of 5 platforms
France	Atlantique 2	12	1985	Additional 10 aircraft in mothball storage
Poland	8 AN-28	8	1986	Light MPA with limited ASW capability
Spain	5 P-3A/B Orion	5	1979	Purchased from Norway, entered Spanish service 1989
Norway	6 P-3	4	1989	2 additional P-3s dedicated to pilot training
Netherlands	P-3	0	1981	Gave up MPA capabiltiy in 2003
Germany	8 P-3	8	1981	Entered German service in 2006. Acquired from the Netherlands after cancellation of new procurement of MPAs
Canada	18 CP-140	18	1981	10 aircraft undergoing service life extension work
Turkey	6 CN-235	6	1988	
Total available MPA		**86**		

Source: IISS 2016 Military Balance.

The Consortium Model

In light of the urgent need for better maritime domain awareness and to bolster the Alliance's maritime capabilities, but within a context of scarce defense resources, NATO and its members should consider a consortium approach to the next generation of maritime patrol aircraft, where interested NATO members would be able to coordinate their efforts, acquire a range of capabilities, and share platforms, maintenance, basing, training, and the intelligence, surveillance, and reconnaissance derived from MPA missions. An MPA consortium would benefit from NATO's now considerable experience in building common and multi-national capabilities, and would likely be best served by an evolutionary process that is broadened in scope over time. Key considerations for an MPA consortium would include the range of available platforms (both manned and unmanned), regional roles, potential members, the role of the United States, how the consortium can interact with other multinational projects such as the Allied Ground Surveillance effort, and opportunities for developing other elements, such as the concepts of operations, and command and control.

US Navy P-8 preparing for take-off in Germany to participate in the exercise BALTOPS 15. *Photo credit:* US Naval Forces Europe-Africa.

Previous Experience

A NATO maritime patrol aircraft consortium would be far from the Alliance's first multi-national capabilities project. Indeed, over the years NATO has, through various approaches, acquired a heavy lift capacity with C-17s, Airborne Early Warning and Control (AWAC) aircraft, and intelligence, surveillance, and reconnaissance drones under the Alliance Ground Surveillance (AGS) project. While some of these efforts have faced major delays and political complications, others have enabled NATO, its members, and partners to relatively quickly gain capabilities, which they would not otherwise be able to afford or operate fully on their own. The C-17 consortium stood up an initial operational capability within three years, and the NATO AWACS have become a core function of NATO that have been employed in a range of NATO operations, including providing coverage over the US east coast in the wake of the 9/11 attacks, and now again to backfill requirements, as national AWACS aircraft deploy forward to support the anti-ISIS campaign in the Middle East.[14]

Previous attempts to conserve MPA capabilities and to maximize their usefulness have met with only limited success. Pooling MPA capabilities was one of the original Smart Defense projects rolled out in 2011. Led by Germany, the project only gathers a limited set of MPA-operating countries in Europe, and the effort is not, by definition, intended to regenerate or enhance MPA capabilities in Europe. It is merely intended to make better use of what already is in place in the participating nations. In principle this effort is helpful, but falls short of needs given the new security environment in and around the maritime domain.

A NATO MPA consortium can draw lessons from all previous multi-national efforts, but the C-17 project

14 Aaron Mehta, "NATO to Backfill AWACS, Assist Europe with Migrants," *Defense News*, February 11, 2016, http://www.defense-news.com/story/war-in-syria/2016/02/11/nato-awacs-anti-isil-mission-syria-islamic-state/80220288/.

is probably the most instructive. The heavy airlift consortium was formed in 2007 under the NATO umbrella, but functions outside the NATO chain of command. The consortium is financed by its twelve member nations (both NATO members and partners), and the Heavy Airlift Wing is staffed by the same twelve nations. The aircraft of the wing are available for both NATO missions, as well as national taskings by the consortium members, in accordance with sharing arrangements. The share of national flight hours are distributed according to the level of resources that each participating nation has contributed to the consortium.[15]

Potential Platforms

There are a number of platforms and systems available on the global defense market that could be considered for a NATO MPA consortium, with both European and US providers. These range from the very sophisticated and full-spectrum capable MPA platforms, to less capable, but cheaper, options. Current producers include Boeing, Airbus, Lockheed Martin, Northrop Grumman, Saab, Alenia, and Embraer.

NATO should also consider a family of systems that can be gathered under an MPA consortium, which could include manned and unmanned systems, as well as aerostats. This would give the consortium members a range of capability options, given the specific needs of each consortium member and NATO as whole, from high-end ASW against a capable opponent, through maritime domain awareness and expeditionary, airborne ISR, to coastal monitoring. Indeed, the consortium could be further divided into regional groupings, where the northern members may want to focus on platforms and systems that will enhance ASW and ASuW, while southern members could focus on platforms more specifically geared toward maritime ISR tasks. Modern network technology would also make it possible for the various manned and unmanned systems to share the operational picture across systems. Here NATO could also consider appropriate linkages between the MPA consortium and the AGS project, which operates high-end drones (with the ability to play a maritime role), with a planned initial operating capability by 2017.

Potential Consortium Members

A NATO MPA consortium could draw its members from all corners of the Alliance. The specific maritime challenges may be different in NATO's north, east, and south; but MPA is a capability that can respond to those various challenges and is sought by all in some form. Consortium members could include the UK, Norway, Germany, the Netherlands, Italy, Spain, France, Poland, Bulgaria, Romania, Greece, Turkey, and the United States. Sub-groups of nations could be created under the umbrella of the consortium, which could focus on a specific set of capabilities that are most needed by that group of nations. For example, a sub-group of northern NATO members may want to focus on platforms and systems that contribute to high-end ASW, while a sub-set of southern NATO nations may want to focus on unmanned systems and aerostats for coastal and surface monitoring. The capabilities needed to ensure adequate MDA will also differ due to characteristics of the maritime domain. For example, the resources and systems required to provide ISR and to operate in constrained maritime spaces, such as the Baltic Sea and the Black Sea, will surely be different from those needed in the Atlantic and the High North.

The consortium would benefit from a lead nation, borrowing from NATO's framework approach that has developed since its inception at the Wales Summit.[16] Here, the UK may be able to serve as that framework nation, and also, perhaps, offer to host the main basing for the consortium. The regional sub-groups could also adopt a framework nation approach for their specific needs and capabilities.

Non-flying Contributions

Some of NATO's members, such as Iceland and the Baltic States do not operate military aviation of any significant size. Others, such as Romania and Bulgaria, currently do not operate maritime patrol aircraft. These countries could still play important roles in an MPA consortium. They could provide bed down sites in their countries along with pre-planned and coordinated ground support. This would enable MPA assets from the consortium or individual NATO nations to quickly and seamlessly operate in a region, such as the High North, the Baltic Sea, the Mediterranean, or the Black Sea for exercises or in a time of crisis or war. Indeed,

15 NATO, "Strategic Airlift Capability," September 7, 2015, http://www.nato.int/cps/en/natolive/topics_50105.htm.

16 See, for example, Franklin D. Kramer, " NATO's Framework Nations: Capabilities for an Unpredictable World," Atlantic Council, April 15, 2014.

enabling the consistent presence of manned and unmanned systems above and around the Black Sea would do much to boost NATO's maritime deterrence in the region, as the Montreux Convention limits the presence of warships in the Black Sea. However, no such restrictions exists for airborne platforms. [17]

Hosting MPAs and providing ground support could also be a role filled by NATO's two Nordic partners Finland and Sweden, as both countries concluded Host Nation Support Agreements with NATO at the Wales Summit in 2014. This would serve as a substantial contribution to NATO's ability to operate in the Baltic Sea region by two of the Alliance's most important partners.

The Role of the United States

While the United States is currently on track to modernize its maritime patrol aircraft fleet with both manned (P-8 Poseidon) and unmanned (MQ4 Triton) vehicles, it still has an important role to play in an MPA consortium under the guise of NATO. Indeed, US buy-in and support for this concept would do much to entice European nations also to join the consortium. One way would be for the United States to contribute a P-8 aircraft to the consortium, just as the United States did with a C-17 to catalyze NATO's heavy lift consortium in 2005. Furthermore, the US Navy currently operates MPAs out of its base in Sigonella, Italy. The United States could consider opportunities for cross-training, exercises, and patrols with the NATO MPA consortium.

Additional Benefits

A consortium approach to regenerating MPA capabilities across the Alliance would also be an opportunity to achieve a higher degree of commonality of systems among NATO members, which would further reinforce interoperability across maritime forces in the Alliance. Furthermore, the consortium could be used to further develop concepts of operations for MPA and maritime domain awareness, and to begin building regional and Alliance-wide command and control arrangements.

Conclusion

A NATO MPA consortium would be a cost-effective way for Alliance members to build a robust set of capabilities, at a time when NATO's maritime flanks are increasingly turbulent, contested, and competitive. It is clear that NATO faces maritime threats and challenges to both its north and south that the Alliance will need to respond to now and in the coming years. But a consortium approach would also serve larger purposes than just being an efficient way for cash-strapped allies to regain a badly needed capability. A consortium could draw in members from the four corners of the Alliance to work together on an important initiative, at a time when many (including the current leadership in Moscow) think that the Alliance is splintering. An MPA consortium could also give added impetus to the broader idea of pooling, sharing, and international defense cooperation, something that has been called for by NATO and national leaders for many years—made more urgent by defense austerity across the Alliance. Finally, an MPA consortium would provide a tangible and long-term deliverable for an Alliance still struggling to find its footing and provide value for its members in the new security environment.

Magnus Nordenman is the Director for the Transatlantic Security Initiative and the Deputy Director of the Brent Scowcroft Center on International Security at the Atlantic Council.

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17 See Conor Sullivan, et al., "Responding to Russia after the NATO Summit: Unmanned Aerial Systems Overmatch in the Black Sea," *Defense Horizons*, National Defense University, April 2015.

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1030 15th Street, NW, 12th Floor,
Washington, DC 20005

(202) 463-7226, www.AtlanticCouncil.org