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The Naval Alliance

Preparing NATO for a Maritime Century

Magnus Nordenman



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by Magnus Nordenman

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Atlantic Council
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EXECUTIVE SUMMARY

Operationally and strategically NATO has been dominated by its ground-centric operations in places such as Afghanistan, Bosnia, and Kosovo over the last two decades. However, the Alliance has also been incredibly active across the full spectrum of operations in the maritime domain, to a degree that is not fully appreciated by the broader transatlantic security community. And with the Alliance effort in Afghanistan quickly receding, NATO should consider taking on a broader role in the maritime domain, as events and trends in and around the sea are likely to become increasingly important throughout this century to transatlantic interests. An effective long-term NATO response to the changing European security environment in the wake of the Ukraine crisis must also have important maritime components.

The maritime domain is vital to the security, stability, and prosperity of all Alliance members on both sides of the Atlantic. The seas serve as a superhighway to transport goods, raw materials, and energy supplies between producers and consumers across the globe. In addition, the maritime domain is increasingly important as an arena for resource extraction. For NATO, as well as other global security actors, the maritime domain also serves as a global commons, enabling rapid power projection across vast distances in order to provide deterrence or respond to threats with robust and persistent forces.

In the coming decades, it is likely that the maritime domain will become increasingly congested and competitive. This development is driven by global megatrends, including the rise of new powers, climate change, disruptive technologies, and urbanization and littoralization. These factors will make the maritime environment more complex, and will include security challenges from both nonstate and state actors. Indeed, the return of geopolitical competition, with the Ukraine crisis only being one example of this rekindled contest, may be felt most acutely at sea in the coming decades.

Looking ahead, there are important roles for maritime forces to fulfill in terms of accomplishing the core tasks of the Alliance, including collective defense and deterrence, crisis management, and cooperative security. Moving forward, maritime forces may be best positioned to respond to a crisis outside of NATO's borders, or to operationally advance the Alliance's partnership agenda with actors that are far removed from the North Atlantic region. Maritime forces also bring powerful capabilities to NATO's collective defense and deterrence toolbox,

an aspect of NATO's military power that is increasingly relevant in light of the Ukraine crisis and growing Russian aggressiveness, among other things.

In the emerging global security environment, NATO must also mind a number of maritime spaces that are directly related to the security of Alliance members. These include the Baltic, the Mediterranean, the Norwegian sea, and the Black Sea, as well as strategic choke points through which much of the trade to and from Europe passes. In and around these seas, NATO will face traditional security challenges, as well as new ones spawned by social turmoil and political instability. In other words, these spaces constitute NATO's flanks in an increasingly turbulent and contested world.

In order to better prepare for a maritime century, NATO should consider, among other things:

Policy

Review, Elevate, and Execute the AMS. NATO's Alliance Maritime Strategy (AMS) is an excellent foundational document for building forces, capabilities, and exercises, and planning for the future maritime environment. However, the strategy has received scant attention outside of a small group of NATO experts, military leaders, and policymakers. It now needs to be reviewed to ensure that it aligns with the new European security environment. NATO should give the AMS a higher public profile and elevate its standing. It should also clearly communicate the benefits of the AMS to NATO publics, partner nations, and institutions, as well as other key countries around the world. This would send a strong signal about the Alliance's commitment to its security interests in and around the maritime domain.

Serve as an Advocate of Good Order at Sea. NATO is an alliance that counts many of today's most prominent maritime powers as members or partners. Several NATO members are also leading actors in global maritime trade and resource extraction. This gives the Alliance a platform to serve as an advocate for good order at sea, adherence to norms, and respect for international law and arrangements, such as the freedom of the seas. Such an effort of "maritime diplomacy" could significantly help to shape the behavior of emerging and re-emerging actors in the coming decades.

Seek Alignment and Commonality between the AMS and the EU Maritime Strategy. The Alliance and EU should launch a dialogue in order to share perspectives on and priorities for their respective

maritime strategies. They should seek to align their strategies, in order to identify and cover gaps, and to enhance future NATO-EU collaboration in the maritime domain. The strategies cannot, and should not, be identical or perfectly synchronized. After all, NATO is a transatlantic political-military alliance, while the EU is a broad-spectrum, supranational European organization. However, because there is substantial overlap in both membership and interests between the two institutions, aligning strategies would allow both institutions—as well as the broader transatlantic community—to see the existing NATO AMS and the EU maritime strategy as opportunities to enhance the NATO-EU relationship.

Give Smart Defense a Naval Dimension. NATO's Smart Defense initiative is an effort to sustain and build capabilities during these austere times by using cross-national cooperation, pooling, and sharing. However, only a few of the Alliance's Smart Defense projects fall into the naval realm. NATO's members should look to increase the number of maritime-related projects under Smart Defense. For example, this could include areas such as joint maintenance of ships and maritime aircraft, and antisubmarine warfare training.

Build Expertise About the Regions Surrounding Seas of Key Interest to the Alliance. NATO has been strategically surprised by the war in Georgia in 2008, the Ukraine crisis in 2014, the Syrian civil war, and the uprising in Libya in 2011. In order to limit the risk of strategic surprise in the maritime domain, NATO should develop and maintain in-house expertise about the seas of special importance to the Alliance and the security environment within and around them. Much of this knowledge already resides within NATO nations that border those seas. However, members of the Alliance must do a better job of sharing and aggregating this knowledge and interpret the implications for Alliance security.

INTRODUCTION

NATO and the militaries of its member states have taken on a decidedly ground-centric character over the last decade. The Alliance undertook a protracted counterinsurgency and reconstruction campaign in Afghanistan, and many NATO members participated in European Union (EU) and coalition operations in places such as Mali, Iraq, and the Democratic Republic of Congo. This small war and ground-centric focus has influenced training, exercises, planning, and procurement across the Alliance—as well as the strategic mindset, culture, and priorities of the Alliance and its political and military leaders. Indeed, this ground-centric approach has been continued into the Alliance’s reassurance efforts in Europe’s East in the wake of the Ukraine crisis. However, the maritime domain will rise in strategic importance in the coming decades due to, among other things, an increase in the number of new naval powers, the rise of Asia, the return of geopolitical competition, and the further globalization of trade. These developments will

test the maritime dimensions of NATO’s collective defense and deterrence tasks, as well as its ability to carry out crisis management and cooperative security efforts. Indeed, recent Russian prodding along NATO’s flanks to test the Alliance’s readiness and resolve has to a large extent occurred within or over the maritime domains in places such as the Norwegian Sea, the Baltic Sea, and the Black Sea. The recent NATO Summit in Wales also specifically pointed to developments in the maritime domain, and the need for the Alliance to respond to and prepare for them.

NATO now has an opportunity to take the lead on the transatlantic community’s future security role in the maritime domain by setting its orientation, priorities, capabilities, and force structure to fully respond to an increasingly insecure and competitive maritime domain that remains vital to transatlantic peace and prosperity.



Allied warships underway in the Baltic Sea during the exercise BALTOPS 15 in early June of 2015. *Photo credit: US Navy.*

THE IMPORTANCE OF THE GLOBAL MARITIME DOMAIN TO NATO AND ITS MEMBERS

The global maritime domain is easy to ignore for non-mariners, yet it is absolutely vital for global prosperity and communications. More than 90 percent of raw materials, components, finished goods, and energy supplies travel between supplier and consumer via the maritime domain.¹ The maritime domain is vitally important in the twenty-first century, as globalization has spread and economies have become increasingly interconnected. Global maritime trade has quadrupled over the past four decades, and is projected to double again over the next fifteen years, on the keels of more than one hundred thousand merchant vessels.² Furthermore, the sea is a key source of food across the world, and has become increasingly important for energy extraction through the use of offshore platforms.

As advanced economies that rely on international trade and communications, NATO's members depend on the open use of the global maritime domain. NATO members operate at least twenty ports of global significance, and the maritime domain also facilitates more than 40 percent of the EU's internal trade. Four of the ten largest shipping companies in the world are headquartered in NATO countries, and eight of the top twenty shipping nations in terms of tonnage in the world are NATO members.³ A serious disruption of part of the global maritime domain could spell economic disaster for NATO economies, disrupting shipments of energy, raw materials, and finished goods.

The world's oceans are international spaces open to the peaceful use of nations, people, and private industry for communications, travel, transportation, and resource extraction. They enable power projection across the world—the ability to access a crisis area quickly, without the need for basing arrangements, and the ability to provide support to operations ashore from a standoff distance. The maritime domain is also ideal for military diplomacy. Naval units can reach out to their counterparts from other nations across the globe and

interact and collaborate with them in ways that ground and aviation units simply cannot. By conducting joint exercises and drills, they can enhance maritime safety and security, build confidence, establish partnerships, and strengthen alliances.

NATO members on both sides of the Atlantic, and the Alliance itself, view the maritime domain as increasingly important. NATO's 2010 Strategic Concept highlighted members' dependence on the free global flow of goods and energy supplies, much of it carried across the sea.⁴ The Strategic Concept was followed by the 2011 Alliance Maritime Strategy (AMS), which directly spoke to NATO's interests, roles, and priorities in the global maritime domain. In light of the changing maritime security environment, the United Kingdom (UK) unveiled its new maritime security strategy in 2014, and the US Navy has recently revised and updated its 2007 strategy, "A Cooperative Strategy for 21st Century Seapower." In France, the maritime domain has been the subject of presidential speeches, as well as a national maritime strategy (the "Blue Book") in recent years. Additionally, in the summer of 2014, the EU released its own maritime security strategy that clearly defines the maritime domain as key to European peace, security, stability, and prosperity. Thus, there is a broadly shared concern—throughout much of the transatlantic community and the Alliance—about the emerging challenges in the global maritime domain. However, in the case of NATO little has been done in terms of resources, guidance, or operationalizing the AMS.

1 United States Navy, *A Cooperative Strategy for 21st Century Seapower* (Washington, DC, 2015), p. 2, <http://www.navy.mil/local/maritime/150227-CS21R-Final.pdf>.

2 Lloyd's Register, QinetiQ, and University of Strathclyde Glasgow, *Global Marine Trends 2030* (London, 2014), p. 50, <https://www.dropbox.com/sh/ysc3kkspszxs6de/AAB4ZvPj9WUTCUt7hhJTIVIea/GMT2030%20HighRes.pdf>.

3 World Shipping Council, "Top Exporters of Containerized Cargo 2009 and 2010," <http://www.worldshipping.org/about-the-industry/global-trade/trade-statistics>.

4 NATO, *Active Engagement, Modern Defence: Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organization* (Brussels, 2010), p. 12, http://www.nato.int/nato_static/assets/pdf/publications/20120214_strategic-concept-2010-eng.pdf.

NATO IN THE MARITIME DOMAIN

NATO has a strong heritage as a maritime alliance. During the Cold War, naval forces played a major role in deterring a Soviet invasion of Western Europe, and the unfettered use of the Atlantic Ocean was absolutely vital to the ability of the United States to reinforce Europe in a war scenario. Since the end of the Cold War, NATO has embarked on a wide range of crisis-management operations, stretching from the Balkans to Afghanistan. While operations such as the International Security Assistance Force (ISAF) effort in Afghanistan and Operation Unified Protector over Libya have garnered headlines and have been the major focus of NATO for more than a decade, this does not mean that NATO has been absent at sea. In fact, those very operations would not have been sustained without a strong and enduring maritime component.

NATO's more expeditionary orientation started with the naval blockade effort (Operation Sharp Guard) against the warring parties in the former Yugoslavia during the early 1990s. Indeed, out of thirty-six operations launched by the Alliance since the end of the Cold War, ten were primarily maritime operations. Another five had significant maritime elements, including long-range strike from the sea in Operation Allied Force in Yugoslavia and Operation Unified Protector in Libya.⁵ The latter included more than twenty surface combatants, amphibious ships, and submarines from NATO nations.⁶ Even NATO's effort in landlocked

OUT OF THIRTY-SIX OPERATIONS LAUNCHED BY THE ALLIANCE SINCE THE END OF THE COLD WAR, TEN WERE PRIMARILY MARITIME OPERATIONS.

Afghanistan has been supported from the sea; carrier-based aviation on station in the Indian Ocean has provided close air support, command and control, and electronic warfare.

NATO's maritime efforts since the end of the Cold War stretch across the full spectrum of operations—from capacity building to war fighting. However, NATO's maritime operations have been largely reactive, and have been launched in response to unrest or emerging threats ranging from the Balkans to South Asia. Furthermore, they have been undertaken in a strategically permissive environment, where the global maritime domain has been virtually dominated by the West. This strategic environment is changing rapidly.

NATO Naval Operations	NATO Operations with Maritime Elements
Southern Guard, 1991—Maritime surveillance	Deny Flight, 1995—Naval strike
Anchor Guard, 1991—Maritime surveillance	Deliberate Force, 1995—Naval strike
Agile Genie, 1992—Maritime surveillance	Allied Force, 1999—Naval strike
Maritime Monitor, 1992—Maritime patrol	ISAF, 2003-2014—Close air support, reconnaissance
Maritime Guard, 1993—Naval embargo	Unified Protector, 2011—Naval strike
Sharp Guard, 1993-1996—Naval embargo	
Active Endeavor, 2001-present—Maritime counterterrorism	
Allied Provider, 2008—Shipping escort	
Allied Protector, 2009—Counter-piracy	
Ocean Shield, 2009-present—Counter-piracy	

5 Allied Command Operations, NATO, "NATO's Operations 1949-Present," (NATO, 2010), pp. 1-8, <http://www.aco.nato.int/resources/21/NATO%20operations,%201949-Present.pdf>.

6 Brooke A. Smith-Windsor, "NATO's Maritime Strategy and the Libya Crisis as Seen from the Sea, Research Paper, no. 90 NATO Defense College, (Rome, March 2013), p. 2, <http://www.scribd.com/doc/133445312/NATO-s-Maritime-Strategy-and-the-Libya-Crisis-as-Seen-from-the-Sea>.

MARITIME FUTURES

The global maritime domain is set for considerable change over the coming decades, which will impact global and transatlantic security, as well as future naval requirements and missions.⁷ Outlined below are some of the global trends—first outlined by the United States, UK, and other governments—that will make the maritime domain more crowded, competitive, and turbulent.

Rise of the Rest

The rapid economic growth of developing nations will have a wide range of effects on the global maritime domain. Global maritime trade patterns will change as countries such as China, Indonesia, and Brazil become ever larger exporters of raw materials, components, and finished goods, while also needing to satisfy the import needs of their growing middle classes.⁸ The need for not just oil, coal, and gas but also steel and other metals will continue to rise significantly in Asia.

The increasing wealth of emerging nations also means that there are resources available to be translated into military power, including naval power. Indeed, the current increase in defense spending across Asia has a decidedly maritime character to it. China, India, Singapore, Malaysia, Australia, Vietnam, and other nations have rapidly acquired increasingly sophisticated naval platforms, such as attack submarines and destroyers. China and India are also pursuing aircraft carriers, which enable the projection and sustainment of considerable combat power over vast distances, and are the ultimate expression of modern naval power.

The global maritime domain will include an increasing number of regional and global naval actors in the coming decades. Emerging powers such as China and India will be increasingly capable of defending and monitoring the trade lanes to and from their nations, even at a great distance. The Chinese navy is already active in the global maritime domain, having participated in piracy suppression operations off the coast of Somalia and carried out a major noncombatant evacuation operation (NEO) of its citizens in Libya as Muammar al-Qaddafi's regime unraveled in 2011. Chinese state-owned companies are also major investors in the maintenance and expansion of

European ports, especially the port of Piraeus outside of Athens, Greece.⁹

The rise of the rest and naval competition is not a phenomenon exclusive to the Asia-Pacific region. For example, Brazil is increasingly active in the maritime domain, while bolstering its capabilities for maritime patrolling and surveillance. Brazil will also expand its submarine fleet over the next decade, including adding nuclear powered submarines to its force.¹⁰ Brazil's interest in the maritime domain extends to Africa, where Brazil has increased defense and naval cooperation with west African nations because the continent provides a significant percentage of Brazil's energy supplies.¹¹

Russia may be best described as a reemerging power. The long-term future trajectory and posture of Russia is of renewed and critical importance to the transatlantic community, following Russia's annexation of Crimea and continued support of the separatists in, and direct incursions into, eastern Ukraine. Russian naval activity across the maritime domain is increasing, with the Russian submarine force being particularly active.¹² 2014 saw a pronounced increase in Russian naval activity, especially in the Baltic and Black seas, which has continued into 2015.

Russia has embarked on an ambitious and long-term armaments program that promises to significantly strengthen its naval power. The plan calls for, among other things, eight new strategic missile submarines, up to six nuclear attack submarines, nine conventional submarines, fifteen new frigates, and up to twenty

9 Frans-Paul van der Putten, *Chinese Investment in the Port of Piraeus, Greece: The Relevance for the EU and the Netherlands* (The Hague: Clingendael, February 14, 2014), <http://www.clingendael.nl/sites/default/files/2014%20-%20Chinese%20investment%20in%20Piraeus%20-%20Clingendael%20Report.pdf>.

10 "Brazil to Get Its First Nuclear Submarines," *Agence France-Presse*, March 2, 2013, <http://archive.defensenews.com/article/20130302/DEFREG02/303020009/>.

11 Adriana Erthal Abdenur and Danilo Marcondes de Souza Neto, "Brazil's Maritime Strategy in the South Atlantic: The Nexus Between Security and Resources," *South African Institute of International Studies*, November 2013, http://www.academia.edu/5831323/Brazils_Maritime_Strategy_in_the_South_Atlantic_The_Nexus_Between_Security_and_Resources_South_African_Institute_of_International_Affairs_SAIIA_Occasional_Paper_2013.

12 Sam Lagrone, "CNO Greenert: Russia Very Busy in the Undersea Domain," *US Naval Institute*, November 2014, <http://news.usni.org/2014/11/04/cno-greenert-russian-navy-busy-undersea-domain>.

7 For an excellent overview, see Chris Parry, *Super Highway: Sea Power in the 21st Century* (London: Elliott & Thompson, 2014).

8 By contrast, energy use in the transatlantic community may decline due to energy efficiency efforts, the shale-gas revolution, and a shrinking manufacturing sector that is being eclipsed by the service and information sectors.



The Norwegian Navy frigate HNoMS Fridtjof Nansen (F310) underway with ships from the US Navy and the Chinese Navy during the RIMPAC exercise in the Pacific in 2014. Several other NATO members also participated in the Pacific exercise, including Canada, France, the Netherlands, and the United Kingdom. While far away from the Euro-Atlantic area, the Pacific will loom ever larger in the global maritime domain. *Photo credit: US Navy.*

new corvettes.¹³ Much of this new naval capacity is intended for the Northern Fleet, which operates in the Arctic, the Atlantic, and the Barents and Norwegian Seas. Russian amphibious capabilities will also be strengthened with the addition of four amphibious ships of either domestic or foreign design.¹⁴ If the program is executed in full, Russia's naval power would almost double. However, it is far from clear whether the effort of rebuilding the Russian military will be fully realized, due to inefficiencies and corruption within the Russian procurement system and defense-industrial base. Furthermore, the currently low global prices for oil and gas, the mainstay of the Russian economy, could also reduce the resources available for Russian defense modernization over the long term. Still, the resources currently devoted to this effort are so large (roughly \$125 billion in the case of naval modernization and expansion) that the program will surely produce considerable and useful output.¹⁵

Although the naval gap between the transatlantic and emerging powers is closing, the United States—the cornerstone of Alliance naval power—will likely remain

the world's preeminent naval power for the next three or four decades.¹⁶ This is, in large part, because modern naval power is extremely complex. It requires not only platforms, but also command-and-control functions, sophisticated supply and maintenance organizations (including an industrial base), training, experience, and well-developed concepts of operations. These elements, and what the American naval strategist Alfred Thayer Mahan referred to as the naval spirit, can take a long time for any nation to develop and hone.¹⁷

Global Climate Change

The ongoing process of global climate change will have a decisive impact on the global maritime domain in the coming decades. The consequences of global climate change will include increases in the frequency and severity of extreme weather events, especially along the coasts. These environmental disasters will necessitate humanitarian responses in order to save lives and preserve regional stability. Though not primarily intended for this purpose, naval forces can make major contributions to disaster-response operations. They are able to move relatively quickly to a disaster area, remain there for a prolonged period of time, and

13 Jakob Hedenskog and Carolina Vendil Pallin, *Russian Military Capability in a Ten-Year Perspective-2013* (Stockholm: Swedish Defense Research Agency, 2013), pp. 133-135, http://www.foi.se/ReportFiles/foir_3734.pdf.

14 Ibid.

15 Ibid.

16 Lloyd's Register, QinetiQ, and University of Strathclyde Glasgow, pp. 94-98.

17 Jan Joel Andersson, "The Race to the Bottom," *Naval War College Review*, winter 2015, vol. 68, no. 1, pp. 13-29.

assist with evacuations—ferrying emergency supplies, restoring basic services, providing medical assistance, and coordinating the larger response effort. Indeed, the US Navy and Marine Corps routinely carry out disaster-response operations, most recently in the Philippines, Japan, and Haiti. In addition to saving human lives and managing stability, these operations can also serve as a means to strengthen the relationship with a country or region, and as an opportunity to work together with other navies.

Many estimates of the global impact of climate change indicate that the transatlantic community will be comparatively spared from adverse effects. However, regions and countries of special interest to the Alliance—such as Africa, the Middle East, and the Arctic—could very well be subject to adverse and extreme weather that could also have political, economic, and security impacts on NATO members.

Global climate change could also open up new spaces in the global maritime domain, such as in the Arctic. This would enable resource extraction, tourism, and new transport routes. It would also, however, increase the need for maritime-domain awareness—the effective understanding of the activities, infrastructure, and vessels in and around the maritime domain—and some level of naval presence in order to ensure the security and safety of the activities there. It could also heighten naval competition, as actors seek to safeguard their access to that maritime space.

Finally, global climate change could also have an immediate operational impact on maritime forces. More adverse and extreme weather conditions will increase the wear and tear on equipment and platforms, which has implications for operational readiness and maintenance time and costs. Adverse and unpredictable weather could also frustrate planned operations, due to the difficulty of operating in circumstances such as storms and hurricanes.¹⁸

Urbanization and Littoralization

The world is rapidly urbanizing. In 2008, for the first time in human history, a majority of the global population lived in urban areas, and that percentage is expected to increase.¹⁹ The number of megacities across the world will therefore continue to increase, primarily in the developing world. These urban areas will be global centers of power and influence, as much of the economic activity, innovation, and political interaction will occur there. There is much promise in this development. However, poorly governed and fragile megacities within weak states

18 Sherri Goodman, *National Security and the Threat of Climate Change* (Alexandria: Center for Naval Analysis, 2007), pp. 37-38, 42, <http://www.cna.org/sites/default/files/news/FlipBooks/Climate%20Change%20web/flipviewerxpress.html>.

19 United Nations Population Fund, “Linking Population, Poverty, and Development,” May 2007, <http://www.unfpa.org/pds/urbanization.htm>.

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could also spawn a number of regional and global security challenges such as organized crime, terrorism, insurgent groups, and radical politics and violent extremism.

These megacities tend to lie at or near the coast, due to the fact that the sea serves as the global conduit for trade and as a substantial source of food. Today, nine of the twelve largest cities in the world are also port cities.²⁰ Already, the vast majority of the world’s population lives less than two hundred miles from the ocean. This trend will also accelerate, as megacities serve as magnets for population movements, both from the countryside and across international borders.²¹

Emerging Technologies

The rapid pace of technological development is changing most aspects of modern life. Emerging technologies will also help shape the future maritime domain and the contours of future naval power. For example, increasingly rapid communications and the ubiquity of satellites could further speed up transit times across the maritime domain, enabling quicker delivery of raw materials, components, and energy resources across the globe.²²

Electric rail guns and focused laser weapons may prove to be a leap forward for naval firepower, and can be leveraged for defense against ballistic and cruise missiles. And there is much room for the development of larger and more capable unmanned naval systems, both on and below the surface. Unmanned aerial vehicles (UAVs) will also play a larger role in naval aviation, as evidenced by the US Navy’s success in both launching and recovering large prototype intelligence, reconnaissance,

20 Lloyd’s Register, QinetiQ, and University of Strathclyde Glasgow, p. 19.

21 United States Navy, *A Cooperative Strategy for 21st Century Seapower*, p. 2.

22 Mark Barrett, Dick Bedford, Elizabeth Skinner, and Eva Vergles, *Assured Access to the Global Commons, Allied Command Transformation* (Norfolk: Supreme Allied Command Transformation, NATO, April 2011), p. 4, http://www.alex11.org/wp-content/uploads/2013/01/aagc_finalreport_text.pdf.



The USS Kearsarge transiting the Suez Canal, an important choke point for global commerce and for access to the Middle East. Photo credit: US Navy.

and surveillance UAVs (which will likely one day be armed) aboard a carrier in 2013. This feat showcases the maturing of unmanned systems. Furthermore, technologies such as 3D printing (also known as additive manufacturing) could play an important role in naval underway logistics, thereby reducing the need for resupply and raising the level of underway readiness.²³ Finally, air-independent propulsion for conventional submarines is a significant leap in underwater endurance, which makes conventional submarines a harder target for antisubmarine warfare forces.

Currently, the naval forces of NATO members—and especially the United States—hold the lead in the development and deployment of many of these technologies. However, this may not be true for long. For example, Germany, Sweden, and Japan currently operate air-independent propulsion submarines, and they are all NATO members, Alliance partners, or a US ally. But emerging naval powers, such as China, are actively pursuing this technology for their next class of conventional submarines and may challenge NATO

members' lead.²⁴ Once this type of technology has matured within emerging power navies, they could also be exported to other countries around the world.

A More Congested and Competitive Global Maritime Domain

The global trends described above, and the specific impact on the global maritime domain, strongly indicate that the future maritime environment will be more congested, competitive, and prone to conflict and tensions. Under almost any scenario, commercial and military activity at sea will increase and include additional actors.

The export of oil product across the maritime domain is projected to grow from close to 1 billion tons in 2010 to more than 1.6 billion tons in 2030. At the same time, the export of liquefied natural gas by sea could triple in quantity by 2030. The international coal and iron ore trade, which is necessary to sustain the economic growth of emerging nations, is also on a trajectory to roughly triple in size by 2030. The grain trade could almost double, while the shipment of containers across the world's oceans could quadruple.²⁵ Sustaining this growth will require an expansion of available shipping tonnage

23 Jon R. Drushal and Michael Llenza, "3-D Printing Is a Revolution for Military Logistics," *New Atlanticist* (blog), Atlantic Council, November 20, 2012, <http://www.atlanticcouncil.org/blogs/new-atlanticist/3d-printing-revolution-in-military-logistics>.

24 United States Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China* (Washington, DC, 2014), p. 8, http://www.defense.gov/pubs/2014_DoD_China_Report.pdf.

25 Lloyd's Register, QinetiQ, and University of Strathclyde Glasgow, pp. 34-37.

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by a factor of between 1.8 and 3. China alone has the potential to own 24 percent of the global shipping fleet by 2030, making it an aspiring maritime power in a broader sense than in naval terms alone.²⁶

The exploitation of offshore energy sources will also increase in the coming decades, in order to satisfy the ever-increasing energy demand of industry and consumers in the developing world. In 2010, there were 270 active oil and gas platforms in the maritime domain, primarily in the North Sea, the South Atlantic, the Gulf of Mexico, and the Gulf of Guinea. By 2030, there may be as many as 620 such platforms, with especially strong growth in the Arctic, the South China Sea, the Mediterranean Sea, and the Black Sea.²⁷

Increased economic activity across the global maritime domain will bring heightened naval activity, as nations depend on their navies to safeguard their interests and secure the sea routes. Furthermore, the maritime domain itself may become contested as part of the competition between emerging powers, or between rising powers and established ones. Indeed, freedom of navigation in regions such as the South China Sea is increasingly in doubt, due to territorial claims and naval competition. Attempts at restricting freedom of navigation could spread across considerable parts of the global maritime domain.²⁸

²⁶ Ibid., pp. 34-37.

²⁷ Ibid., pp. 112-116.

²⁸ For an extensive discussion of this theme, see Parry, *Super Highway: Sea Power in the 21st Century*.

NATO'S FUTURE NAVAL ROLE

In recent years, the discussion and attention surrounding NATO's maritime role have focused on nonstate challenges, such as piracy and seaborne terrorism. These are important challenges, and they are threats that the international community will have to manage and suppress for a long time to come. However, the future maritime domain will feature a number of different challenges from both nonstate and state actors. The future maritime domain will be more congested with actors and activities than ever before. Emerging powers will increasingly cast doubt on the supremacy of the current model of governance at sea, which today is underpinned by Western, transatlantic, and NATO maritime power and influence.

Collective Defense and Deterrence

Broadly speaking, geopolitical competition is back and growing. This is not only true in the Asia-Pacific region, but also in Europe in the wake of the Ukraine crisis and the 2008 Russia-Georgia war, where Russia is now seeking to alter the European security order with the use of force and subversion. This geopolitical competition, regardless of the region in which it takes place, also will have an impact at sea, and shape how NATO should provide defense and deterrence for its members, and advance transatlantic security interests across the maritime domain.

Since the end of the Cold War, NATO's maritime forces have been broadly free to focus on out-of-area operations, crisis management, and cooperative security. Today and in the future, naval forces will play an integral role in NATO's defense and deterrence construct. Furthermore, the presence of NATO member naval units in an area is an unmistakable signal of the Alliance's commitment to defense against aggression. The deployments of the Standing Mine Countermeasures Group to the Baltic Sea and of the Standing NATO Maritime Group One (SNMG1) to the Mediterranean—both in response to the Ukraine crisis—were examples of such commitment. The recent NATO naval exercises Noble Justification and BALTOPS 15, which focused on high-end warfighting, is another important component of the naval aspect of collective defense and deterrence.

Naval forces can remain on station for quite some time, providing a sustained presence that is important in many defense and deterrence scenarios. Also, Europe's missile-defense architecture has a key maritime element, which will gain in importance as the deployment of missile-defense systems continues to evolve.

However, the emerging security environment in the global maritime domain does not signify a return to the Cold War. The future maritime security environment will be much more dynamic, and will include measures and actors that are not traditionally associated with naval power. For example, in 2006 the terrorist group Hezbollah fired at an Israeli frigate using an antiship missile, a type of capability only available to conventional navies until recently.

Finally, NATO's horizon for collective defense and deterrence in the maritime domain must now expand in order to take into account the "rise of the rest" and emerging naval players. Both the United States and Canada are Pacific, as well as Atlantic, nations. An armed attack on those two countries stemming from the Pacific would be grounds for an Article 5 response by NATO.

Crisis Management

Although NATO's shift back to collective defense in the wake of the Ukraine crisis is justified and understandable, the maritime domain is one area where the Alliance may once again find itself pressed into service conducting out-of-area operations. Due to the global trends of urbanization, littoralization, and climate change, NATO is likely to be called upon to conduct humanitarian relief operations in areas easily accessible from the sea. Furthermore, naval forces under NATO command could also serve an important role as escorts of merchant shipping through waterways that have become contested due to conflicts, crises, or regional rebalancing of power.

Furthermore, naval forces continue to be ideal as supporting elements of operations ashore. This has been the case multiple times over the last decade, during efforts such as Operation Unified Protector, Operation Allied Force, and the ISAF mission in Afghanistan. In the emerging maritime century, this role for NATO naval forces is more likely to grow than to recede.

Cooperative Security

NATO naval forces also could play a key and continued role in cooperative security, especially around the coast of Africa and the southern Mediterranean rim. Maritime insecurity—with challenges such as piracy, smuggling, trafficking, illegal fishing, and unauthorized toxic-waste disposal—is a significant problem along many parts of the African coast.²⁹ Here, NATO could help build

29 Brooke Smith-Windsor and Jose Pavia, "From the Gulf of Aden to the Gulf of Guinea: A New Maritime Mission for NATO?," NATO Defense College, January 2014.

THE PRESENCE OF NATO MEMBER NAVAL UNITS IN AN AREA IS AN UNMISTAKABLE SIGNAL OF THE ALLIANCE'S COMMITMENT TO DEFENSE AGAINST AGGRESSION.

capacity and capabilities among Africa's coast guards and navies via periodic visits by NATO naval units. Building coast-guard and navy capacity in and around the Gulf of Guinea should be of particular interest to NATO nations, as that region will be increasingly important as an energy supplier to the transatlantic community. A cooperative-security role for NATO in the maritime domain in and around Africa would also reinforce the US Navy's Africa Partnership Stations, an initiative that seeks to build African capacity to undertake maritime-security efforts.

NATO Partnerships

NATO maritime forces, operations, and exercises also provide a real opportunity to extend and deepen partnerships after the end of the ISAF mission. This would be especially true for such NATO partners as Japan, Australia, and South Korea, which would otherwise have few options for direct engagement with NATO and member-nation forces. The global maritime domain could also be used to carry out confidence-building measures through joint naval exercises, such as search-and-rescue exercises with increasingly important maritime powers such as Brazil, India, South Africa, and Indonesia. To boot, these maritime nations are located across the world and in some of the planet's most important strategic locations.

The maritime domain may also serve as a platform to further expand the partnership with the Arabian Gulf states, such as the United Arab Emirates. Conducting exercises in the Gulf with NATO's regional partners could also prove valuable as a way to familiarize Alliance navies with the region, which is important to prepare for future contingencies.

Maritime Regions of Special Interest

While the Alliance must understand the global maritime domain, and the implications for Alliance security from conflicts and crises far away from European and North American shores, there are areas and seas that are especially relevant and of immediate interest to NATO and its members. In the context of emerging geo-political competition, these areas constitute NATO's new strategic frontiers. These include:

The Mediterranean. This sea constitutes NATO's southern flank, and the Mediterranean rim is currently in turmoil due to the Arab Awakening and the continued fighting in Syria, Iraq, and Libya. There are also signs of increasing tensions over energy claims in the eastern mediterranean. This could generate the need for future crisis-management efforts by NATO, as well as collective defense challenges. Indeed, the current conflicts in the Middle East have already spawned major flows of refugees across the Mediterranean, which have severely tested national governments' ability to receive and care for them. The Mediterranean is also the operational space for the Alliance's maritime operation Active Endeavor, NATO's maritime security and counterterrorism effort, and for platforms that form part of European missile defense. Finally, over the long term, hostile states may emerge in the Middle East, equipped with area denial capabilities, such as sophisticated anti-ship missiles and air defense systems. This could challenge NATO's ability to operate in and project

power across the Mediterranean. The Mediterranean will also remain the geopolitical crossroads of three continents: Europe, Africa, and Asia. Therefore, the Mediterranean is of increasing interest to emerging powers such as China, since the broader Mediterranean region is not only an important source of energy resources, but also a



Dutch submarine HNLMS BRUINVIS at sea during the NATO exercise Dynamic Monarch in 2014. Submarine warfare and anti-submarine warfare is once again highly relevant for the changing European security environment and for NATO's collective defense and deterrence. Photo credit: NATO.

conduit for exports to Europe. China is also, for example, increasingly concerned about the unrest in the broader Middle East, and its implications for internal stability in China. In military terms this has been expressed to date through visits to European Mediterranean ports by the Chinese navy, joint exercises between China and Turkey, as well as a Chinese non-combatant operation via the sea during the uprising against the Qaddafi regime in Libya in 2011.³⁰ China and Russia have also exercised together in the Mediterranean.

The Black Sea. NATO members Turkey, Romania, and Bulgaria border the Black Sea, and the broader region has been the scene of the contest between Russia and the transatlantic community concerning Georgia and Ukraine. Russia's aggression against Ukraine and its annexation of Crimea were to some degree motivated by Moscow's intent to preserve its naval position in the Black Sea through control of the Sevastopol naval base, which provides Russia with direct access to the Mediterranean. Furthermore, the Russia-Georgia war in 2008 included naval combat and a Russian amphibious landing. Tensions in the Black Sea region will remain high, and naval forces from NATO nations will have to operate there in order to reassure allies, show force and presence, gather intelligence, or support efforts ashore. Naval forces from across the Alliance are already operating and exercising in the region as of this writing, in response to the Ukraine crisis. The Black Sea also witnessed incidents between naval units under NATO command and Russian aviation throughout 2014 and into 2015.

The Baltic Sea. Six NATO allies (Estonia, Latvia, Lithuania, Denmark, Poland, and Germany) and two of the Alliance's most active partners (Sweden and Finland) border this sea. The Baltic Sea has been the site of major Russian exercises in recent years, as well as several NATO and other multinational exercises. Although the Baltic Sea region has been broadly stable since the end of the Cold War, the security situation is changing due to the Ukraine crisis. The Baltic states are increasingly concerned about Russia's intentions and their exposure to Russian aggression. There also have been several naval incidents in the Baltic Sea over the last few years, including an October 2014 antisubmarine operation executed by Sweden in pursuit of a Russian submarine suspected to have intruded deep into Swedish territorial waters. A Finnish research vessel was also aggressively approached by Russian war ships in 2014. There has also been a series of incidents in the airspace above the Baltic Sea between Russian military aviation on the one hand, and commercial and military flights from the region and the

United States.³¹ The Baltic Sea region is important from an economic perspective as well, with significant trade in goods and energy resources crossing the Baltic Sea to and from the Atlantic, as well as key Baltic ports such as Gdansk and Lubeck. The Baltic Sea is likely to be an arena in which the Alliance will need to show presence, in order to reassure Allies and build up a comprehensive understanding of the operating environment.

The Arctic. The Arctic, which to a large extent is a maritime space, is rapidly opening up due to climate change, and this change enables resource extraction, along with shipping routes that hold the promise of significantly reducing the transit times for goods shipped across the world. The Arctic nations, including Russia, have been careful to cultivate areas for bilateral and multilateral cooperation—such as environmental monitoring and emergency preparedness—rather than conflict, but this may change in the wake of the Ukraine crisis and a changing European security order. Indeed, in April 2015 Russia Deputy Prime Minister Dmitry Rogozin violated his EU travel ban by visiting the Norwegian Svalbard islands. Furthermore, emerging powers are taking an interest in the Arctic region. India and China are among a handful of nations that recently gained observer status on the Arctic Council. In the coming decades, the Arctic region is expected to grow in importance, as both a trade route and a source of energy supplies. A conflict or crisis in the Asia-Pacific region could very well be felt across the Arctic, and therefore reach the transatlantic community. Four of the Arctic nations are NATO members, but they have different perspectives on the appropriate role for NATO in the region. Norway advances a role for NATO in Arctic security, while Denmark and Canada are concerned that a larger NATO focus on the Arctic will serve as an irritant in the otherwise peaceful region.

Choke Points. Along with the above-described spaces, the Suez Canal and the Straits of Hormuz are among the maritime choke points to which NATO must pay attention in the coming decades. They can be easily closed off by a state adversary, and can certainly be severely disrupted by nonstate groups. These choke points are key to the transatlantic community, as they carry much of the maritime trade in raw materials, finished products, and energy resources to and from transatlantic markets and producers. Indeed, the United States, France, the UK, and other NATO members already have a naval presence in the Arabian Gulf region to, among other things, safeguard the maritime domain from disruptions, and to work with close regional partners.

³⁰ Special Issue on China in the Mediterranean, *Mediterranean Quarterly*, 2015.

³¹ Thomas Frear, Lukasz Kulesa, and Ian Kearns, "Dangerous Brinkmanship: Close Military Encounters Between Russia and the West in 2014," European Leadership Network, November 2014.

RECOMMENDATIONS

NATO's AMS, rolled out in 2011, garnered little attention, nor did it gain much traction among NATO's members. It was developed at a time when the Alliance was still strongly focused on the war in Afghanistan and nonstate challenges such as piracy and terrorism at sea. The AMS is a good starting point, and the 2014 NATO Summit in Wales further advanced this notion, but NATO must now update its strategy to operationalize and strengthen Alliance responses to a changing security environment, and to plan for the long-term trajectory of the global maritime domain.

Defense austerity across Europe has certainly reduced military capabilities, and this is true for the sea services across the Alliance as well. Still, a significant number of assets and capabilities exist within allied navies, amphibious forces, and coast guards. Setting aside aircraft carriers and big-deck amphibious ships, European navies have a volume of frigates, destroyers, and capable submarines that approaches that of the United States Navy.

In order to respond to a rapidly changing global maritime domain, and to do so with limited resources, NATO and its members should consider the following recommendations in policy, capabilities, and strategic initiatives:

Policy

Review, Elevate, and Execute the AMS. NATO's Alliance Maritime Strategy (AMS) is an excellent foundational document for building forces, capabilities, and exercises, and planning for the future maritime environment. However, the strategy has received scant attention outside of a small group of NATO experts, military leaders, and policymakers. It now needs to be reviewed to ensure that it aligns with the new European security environment. NATO should give the AMS a higher public profile and elevate its standing. It should also clearly communicate the benefits of the AMS to NATO publics, partner nations, and institutions, as well as other key countries around the world. This would send a strong signal about the Alliance's commitment to its security interests in and around the maritime domain.

Serve as an Advocate of Good Order at Sea. NATO is an alliance that counts many of today's most prominent maritime powers as members or partners. This gives the Alliance a platform to serve as an advocate for good order at sea, adherence to norms, and respect for international law and arrangements, such as the freedom of the seas. Such an effort of "maritime diplomacy" could significantly help to shape the behavior of emerging and re-emerging actors in the coming decades.

Seek Alignment and Commonality between the AMS and the EU Maritime Strategy. The Alliance and EU should launch a dialogue in order to share perspectives on and priorities for their respective maritime strategies. They should seek to align their strategies, in order to identify and cover gaps, and to enhance future NATO-EU collaboration in the maritime domain. The strategies cannot, and should not, be identical or perfectly synchronized. After all, NATO is a transatlantic political-military alliance, while the EU is a broad-spectrum, supranational European organization. However, because there is substantial overlap in both membership and interests between the two groups, aligning strategies would allow both institutions—as well as the broader transatlantic community—to see the existing NATO AMS and the EU maritime strategy as opportunities to enhance the NATO-EU relationship.

Capabilities

Enhance Maritime Domain Awareness. NATO, its members, and the broader transatlantic community are already working hard to bolster maritime-domain awareness through a number of national, bilateral, and multinational efforts. However, these efforts must be further reinforced, in order for the Alliance and its members to better understand and monitor those maritime domains that are of special interest to the transatlantic community. For example, NATO has built up considerable domain awareness through Operation Active Endeavour, but this awareness must be preserved and strengthened; so that it can be helpful beyond this operation.

Reenergize the European Amphibious Initiative. This initiative—launched in 2000 by Italy, France, the UK, and the Netherlands—was an excellent effort to increase interoperability among European amphibious forces. However, the initiative has been on pause for some time. Now is the time to reenergize the European Amphibious Initiative, in order to pool and share amphibious capabilities across the Alliance. This initiative would also serve as an ideal platform for European participation in US amphibious exercises and training, something that was already done to a limited extent during Exercise Bold Alligator in 2012 off the coast of North Carolina.

Give Smart Defense a Naval Dimension. NATO's Smart Defense initiative is an effort to sustain and build capabilities during these austere times by using cross-national cooperation, pooling, and sharing. However, only a few of the Alliance's Smart Defense projects fall into the naval realm. NATO's members should look to



US Marines and Estonian soldiers land on the beach during an amphibious exercise outside Tallinn, Estonia.
Photo credit: US Marine Corps.

increase the number of maritime-related projects under Smart Defense. For example, this could include areas such as joint maintenance of ships and naval aviation platforms and antisubmarine warfare training.

Focus on High-End Naval Capabilities. Over the last decade, the naval forces of most NATO members have focused on low-intensity efforts such as counterpiracy, escort duties, and supporting operations ashore. Some have even played a role in immigration enforcement, in concert with coast guards and law enforcement agencies. In order for naval forces to remain credible in a more competitive environment, NATO's member must regain and sharpen high-end naval combat skills, including countermine warfare, antisubmarine warfare, and surface warfare. The naval exercise Noble Justification, which included high-end warfighting elements, is an excellent start. This line of effort must be sustained in the years to come.

Share Technologies and Operational Concepts to Help Alliance Members Prepare for an Anti-Access/Area Denial (A2/AD) World. The United States is currently developing new operational concepts and surveying technologies to develop approaches to effectively operate in future challenging Anti-Access/Area Denial environments. While primarily intended for the Asia-Pacific region, the A2/AD challenge is of increasing importance in Europe as well. Many European navies already have well-developed concepts for operations in high-threat environments that include

hostile submarines, mines, and missile threats. NATO could serve as the platform for sharing operational concepts, tactics, methods, and technologies between small European navies and US naval forces.³² This would bring another opportunity for European and the US navy to work and exercise together, thereby enhancing interoperability and familiarity. It would also be a valuable European contribution to US security interests in the Pacific and beyond.

Resource the Standing NATO Maritime Groups. There are currently two Standing NATO Maritime Groups, as well as two Standing Mine Countermeasures Groups. Of long standing, they constitute NATO's multinational, quick-reaction maritime force. They are consistently underresourced and lack the ability to sustain high-intensity operations over a prolonged period of time.³³ It is politically and strategically important that the Alliance now resource them properly, in order for NATO to have a seapower tool readily available for emerging contingencies and to signal the Alliance's seriousness about the maritime dimension of its core tasks. Indeed, this need was specifically highlighted in the Wales Summit Declaration in September 2014.

32 Michael Hannan, "Punching Above Their Weight: How Four Small European Navies Can Support U.S. Strategic Rebalance," *Royal Swedish Naval Society*, no. 3, 2012, pp. 207-213.

33 Peter Hudson, "The Renaissance at Sea: A New Era for Maritime NATO," *RUSI Journal*, summer 2014, pp. 24-28, https://www.rusi.org/publications/journal/ref:A53B15E62D1BF9/#.U-vZS_ldUYE.

NATO Must Secure Access to the Enabling Domains.

Modern naval operations are enabled and supported by cyberspace and assets in outer space for, among other things, communications, targeting, tracking, and domain awareness. These same assets and networks are used to speed up and expand the commercial use of the maritime domain.³⁴ Although NATO has begun to develop its strategy for protecting its networks and assets in cyberspace, that is not the case for the space domain. NATO must begin to develop concepts and strategies to ensure access to space, and vital assets there, during crisis scenarios and high-end warfighting. This is important in and of itself, but also speaks directly to the current and future efficacy of NATO naval power.

Strategic Initiatives

Build Expertise About the Regions Surrounding

Seas of Key Interest to the Alliance. NATO has been surprised by the war in Georgia in 2008, the Ukraine crisis in 2014, the ongoing Syrian civil war, and the uprising in Libya in 2011. In order to limit the risk of strategic surprise in the maritime domain, NATO should develop and maintain in-house expertise about the seas and the security environment within and around them that are of special importance to the Alliance. Much of this knowledge already resides within NATO nations and Alliance partners that border those seas, but members of the Alliance must do a better job of sharing and aggregating this knowledge.

Consider a NATO Maritime Contribution to

Transatlantic Energy Security. Energy security is primarily a matter for national governments and institutions such as the EU, but NATO could make important contributions in the maritime domain for transatlantic energy security. For example, the Gulf of Guinea could emerge as a maritime region of intense interest to the transatlantic community, as it is expected to provide an increasing percentage of both Europe's and North America's oil supplies.

Continue to “Horizon Scan” the Global Maritime

Domain. Several NATO members—such as the United States, France, and the UK—have recently completed maritime strategies that include descriptions and estimates on the global maritime domain that project out to about 2040. This should serve as a basis for NATO's own thinking about its role in the maritime domain. However, the future operational environment is constantly changing, so the Alliance must continue to monitor strategic developments across the maritime domain, as well as global trends that will help shape the future maritime-security environment. NATO can do this through its Emerging Challenges Division or its Allied Command Transformation.

³⁴ Barrett et al., p. 4.

CONCLUSION

NATO will always need a full spectrum of air, ground, and naval capabilities in order to remain militarily and politically credible to both its members and potential adversaries. However, the last decade has skewed the Alliance toward ground-centric and expeditionary operations. This is an understandable development given the bloody, costly, and protracted campaign in Afghanistan and the peacekeeping missions in the Balkans. In the future, however, the global maritime domain will again be increasingly important as an arena for collective defense, crisis management, and cooperative security. And the domain's importance as the global conveyor belt of goods, components, raw materials, and energy supplies will only continue to grow. The maritime domain will also be a leading space where emerging powers such as India, China, Brazil, and others express their expanding commercial, political, and security interests. Moving forward, the contest between Russia and NATO will also likely be increasingly expressed at sea. NATO and the broader transatlantic community must therefore maintain credibility in the maritime domain in order to safeguard transatlantic interests and advocate good norms, constructive behavior, and respect for international law.

The Alliance, and its members and partners, should see the maritime domain as an opportunity, rather than as yet another emerging challenge that must be attended in an environment of limited resources, war-weary publics, and uncertain transatlantic leadership. The maritime domain presents a chance for the Alliance to once again burnish its credentials as a guarantor of transatlantic peace and prosperity, while making a real contribution to global security, stability, and cooperation. It is time for the Alliance to reclaim its maritime heritage.

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ABOUT THE AUTHOR



Magnus Nordenman is a Deputy Director of the Brent Scowcroft Center on International Security. He directs and manages a wide range of projects focused on the future of NATO and the changing European and global security order. He writes and speaks on transatlantic

security, Nordic-Baltic defense, and US military affairs, and has contributed to, among others, the *Atlantic Monthly*, *NATOSource*, *Defense One*, the BBC, MSNBC, *Time* magazine, and the US Naval Institute. Nordenman is a sought after expert who has provided insights and context on transatlantic security issues for the US government, foreign and defense ministries of US friends and allies in Europe, and the corporate community. He is also the author of the 2014 Atlantic Council report *NATO in an Era of Global Competition*.

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1030 15th Street, NW,
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