ASSESSING BALTIC SEA REGIONAL MARITIME SECURITY

by Frank G. Hoffman

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Assessing Baltic Sea Regional Maritime Security

"The United States must start to consider its response to hybrid warfare at sea, which may require developing new tactics and technologies, working closely with allies and partners, and building U.S. hybrid capability to counter its deployment by other nations and eventually transnational actors." [1]

Admiral James Stavridis, U.S. Navy (ret.)

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The views expressed here are the author's own and do not represent those of any part of the U.S. Department of Defense or the U.S. government.

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[1] Admiral James Stavridis, U.S. Navy (ret.), "Hybrid Maritime Warfare is Coming," *Naval Institute Proceedings* (December, 2016), p. 34.

Abstract

Russia's increasingly assertive behavior in Europe has raised concerns about the North Atlantic Treaty Organization's (NATO) readiness for its principal mission of ensuring the security of its member states. The invasion of Ukraine in 2014 has gathered the most attention, but perceived threats against some NATO members, particularly in the Baltic Sea Region, are also the subject of much public debate. These activities and threats have caused a reassessment of Russian intentions as well as collective security in Europe in general and in the Baltics in particular. Russian threats and covert actions, such as nuclear threats, violations of airspace and suspicious undersea activity, subversion of the political integrity, and intense disinformation campaigns, increasingly challenge the security, stability, and prosperity of U.S. allies.

These factors have forced NATO to improve the Alliance's readiness for rapid response and reassurance measures designed to deter further incursions by Russia. However, NATO and other actors overlook the maritime dimension in the region. The Baltic Sea Region is a unique center of maritime economic activity, which is threatened by Russia's overtly aggressive behavior and could be destabilized by its more indirect methods. The region is a critical hub of economic activity that has numerous vulnerabilities to both direct military action and to hybrid threat activity. Both NATO and the European Union (EU) should pay increased attention to maritime security by developing a comprehensive maritime strategy and resourcing a Maritime Security Enhancement program as part of the European Reassurance Initiative.

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Illustrative Hybrid Scenario—2019

The following illustrative scenario is offered to highlight the indirect attacks of a notional campaign that aims to destabilize the Baltic Sea Region and the rest of Europe for Moscow's benefit.

In retrospect, the campaign was relentless, comprehensive, and thoroughly effective. It was also multi-dimensional and entirely non-attributable. The opening gambit occurred in June 2019 when documents showing that elected officials in Helsinki had taken large sums of money from Russian oligarchs for campaign funding were released by *Wikileaks*. Finland's pro-NATO government fell, and the pending agreement to join NATO was immediately shelved.

Later that same month, the LNG facility at Szczecin, Poland was severely damaged in an explosion. A dozen workers were killed, and an equal number wounded. An underwater vehicle was detected and traced briefly back into German waters after the incident. Investigators now think a mini-submarine or an unmanned underwater vehicle probably delivered some kind of mine to the side of the gas processing facility. A Polish vessel transiting the Kiel Canal had an engine badly damaged, blocking the passage for several days. Right after the ship was towed out of the canal, another Polish vessel had a similar failure in the same area. No explanation was found.

When Poland asked Germany to explain the underwater vehicle that it had detected, Germany disavowed all knowledge. Polish websites were inundated with suggestions that German business interests were behind efforts to discredit Polish commercial firms and that Germany was upset at poor Polish ship maintenance. While this emergency was being discussed, on July 19, internet links using undersea cables connecting Sweden to the south were intermittently blocked, and some traffic was rerouted. Some of the information got through, but to erroneous addresses or in altered form, and Swedish business companies complained of one billion euros in losses.

On July 22, Sweden's air defense system began to erroneously display large numbers of aircraft entering its airspace. Conversely, numerous flights of Russian aircraft flew over Finnish airspace at will, yet Finnish defensive systems never detected anything. Estonia, home of the NATO Centre for Excellence (COE) for cyber security, had its government computer files destroyed entirely by a virulent virus apparently present when the system was created. Backup systems eventually restored many government functions, but critical files, including pension benefit information, appeared permanently lost.

A prominent Russian émigré who lived in Estonia, and who frequently spoke in favor of Moscow's positions on social media, was found hung by the neck in a park on July 28 with an inflammatory anti-Moscow placard attached to his corpse. Russia demanded an apology for the crime and asked for permission to dispatch its own investigation team, which was denied by Tallinn. President Putin issued a harsh statement about Estonian arrogance to his government-controlled TV stations, placed travel prohibitions on Estonian travellers, and ordered a military exercise along the common border. Russian aircraft flew over Estonia's airspace, and two Russian corvettes sailed into Estonia's waters.

On August 1, the request of the Estonian government for an emergency North Atlantic Council meeting to discuss rising security concerns and potential Russian involvement was rebuffed by three member states, including Greece, Hungary, and Bulgaria as premature. They vetoed any agenda items, and the committee did not meet. The Military Committee met, but several nations did not attend and no consensus for action emerged. At the request of Germany, a scheduled naval exercise in the region was cancelled. When the Military Committee attempted to begin planning some cyber security responses, Turkey insisted NATO not get involved in a "domestic" issue.

Three days later, a Russian tanker leaving Primorsk was moderately damaged when it struck some kind of underwater debris. Russia claimed it was attacked by a NATO submarine, hinting that it was either American or German. Russia increased the readiness levels of its air defense systems and ordered a three ship squadron from the Northern Fleet to sail to Kaliningrad. Russia claimed a 25 mile maritime exclusionary zone around Baltiysk, the naval base hub of

Kaliningrad, and had a coast guard cutter enforce it by "shouldering" several German fishing boats. The Russian boat fired several small calibre rounds over the German vessels. Germany's foreign minister issued a public statement condemning Russia's tactics. The next day, a series of probes and hacking against major banks in Berlin were made, with losses of 412.5 million euros. Moscow-based analysts with links to the government opined that these hacks were cover ups for bad German bank deals.

On his popular TV show, the *Vesti Nedeli anch*, Dmitry Kiselyov, told his viewers that Russia was under siege by American agents and that only Putin would save Russian interests from further attack. *First Channel*, the most popular TV channel inside Russia, continued to show stories and pictures of Russian emigres in the Baltics, Germany, and Ukraine being abused in demonstrations. Within a week, the apparent chaos in Estonia reported by Russian TV sparked a wave of demonstrations in St. Petersburg and Moscow demanding that Russia intervene to protect its nationals. Before dawn the next day, as the Estonian government frantically tried again to pull together an emergency meeting in Brussels, Russian amphibious ships appeared in the harbor at Tallinn and began landing Naval Infantry at the cruise ship piers to establish safe zones for Russian nationals; simultaneously, the Kremlin announced that the Estonian government had agreed to accept Russian troops at each of the major ports and airfields in the country to assist with providing temporary safe havens for its nationals suffering at the hands of "terrorists" and "radicals." Within 12 hours, the "little green men" had appeared at airports and harbors in Estonia. Again, Greece, Hungary, and Bulgaria demurred, citing the issue as an Estonian domestic problem. No one in the West's conservative military headquarters perceived the integrated design put in place by Moscow, which was conceived by Putin and a select few advisors around him, all with KGB or GRU experience. By the fall of 2019, NATO was paralyzed, the Nordic countries less inclined to join NATO, more guaranteed long-term energy contracts lined up for *Gazprom*, and Russia established a more positive political relationship with some European capitals. It was a low cost, high risk strategy, and it paid off handsomely for Putin's clique.[2]

The foregoing situation could have been avoided, but NATO and other partners did not properly invest in securing the maritime domain in order to combat Russia's more indirect use of hybrid tactics against its maritime flanks.

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[2] Readers interested in other scenarios should examine retired UK General Richard Shirreff's more kinetic book, *War with Russia 2017*, *An Urgent Warning from Senior Military Command (*London*:* Coronet, 2016).

There is growing consensus that the existing international order faces challenges from revisionist powers, including China and Russia. Managing the rising geopolitical competition from these major powers is the principal strategic challenge for Washington's policymakers. While Russia's capacity to contend with the West has limitations, its diplomatic and military behavior under President Vladimir Putin has nonetheless become more aggressive and assertive, particularly since 2014. Some scholars contend that Russia's recent actions are part of a strategy of predatory "probing," which combines "assertive diplomacy and small but bold military actions to test the outer reaches of American power and in particular the resilience of frontier allies."[3] In addition to the annexation of Crimea and the invasion of the Donbas oblast in 2014, Russia has also been accused of interfering in the domestic political affairs of many of its European neighbors.

The United States retains an enduring vital interest in Europe's stability.[4] The alteration of European borders by force of arms is not acceptable to Western leaders in the 21st century. Yet, these leaders must do more to dissuade Russia from continuing its predatory behavior. Putin may not be trying to provoke a fight with the United States directly, but his efforts seem to seek the establishment of weak buffer states in a privileged sphere of influence all along Russia's European periphery. Hence, both the post-Cold War settlement and international norms and laws are now back in question. As the principal guarantor of the international order and the norms underwriting them, the United States cannot ignore Russia's actions. These activities weaken the independence of numerous NATO members and, as such, constitute a threat to Europe's stability and prosperity. A prosperous, stable, and independent Europe is a core interest of the United States, and a cohesive NATO alliance is an effective means towards that end. Maritime security of the region is paramount to secure the larger national interests of the United States and to create a stable and prosperous Europe. That background sets the foundation for this research paper, which explores the vulnerabilities and projects actions that the Baltic Sea Region might face in light of Russia's ongoing actions.[5]

The study presents four sections. The *first* section examines the Baltic Sea Region and its vulnerabilities, especially in the area's non-military dimensions. The *second* section details Russia's actions in the region and their capabilities. This section also discusses Russia's brand of hybrid warfare: a malign mixture of political, military, and disinformation activities. The *third* section describes NATO's maritime capabilities and ongoing efforts to deter and resist Russia. The *fourth and final* section of the study proposes a general strategy and capability investments, in both military and civilian domains, to better deter and/or respond to hybrid threats. While this research does not generate a comprehensive strategy, it does offer enough to catalyze enhanced deterrence against identified maritime security gaps, with clear recommendations for NATO strategists and force planners.

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[3] A. Wess Mitchell and Jakub Grygiel, "Predators on the Frontier," *The American Interest*, March 2016. Available at http://www.the-american-interest.com/2016/02/12/predators-on-the-frontier/.

[4] For a strong argument over this enduring national interest, see, Eric Edelman and Whitney M. McNamara, *U.S. Strategy for Maintaining a Europe 'Whole and Free*,' (Washington, D.C.: Center for Strategic and Budgetary Assessment, 2017), pp. 1–11.

[5] It should be noted that the Baltic Sea Region includes numerous states and not just the three small and vulnerable Baltic states of Estonia, Latvia, and Lithuania.

The Baltic Sea Region

As an area of growing strategic competition, and a fault line between the existing liberal post-Cold War order and an autocratic state, the Baltic Sea Region ranks high in today's security discussions. Much of the discussion related to Baltic regional security is military-centric and overlooks the importance of the non-military aspects, including the maritime dimension to the economic prosperity and security of the region. Efforts to examine the security challenge in the Baltic Sea Region tend to focus on deterring a direct conventional assault from Russian ground forces directed against one of the three Baltic states in a *coup de main*—like the seizure of Crimea.[6] A well-crafted Baltic defense strategy against conventional challenges exists, but implementation requires decisions and funding, and a need also exists to expand the discussion beyond conventional challenges with a broader aperature that includes the unexplored maritime front.[7]

Leading Alliance commanders have highlighted the rise of challenges to NATO's freedom of action in the North Atlantic, but they remain oriented on Cold War priorities that emphasize the so-called Greenland-Iceland-United Kingdom (GIUK) gap.[8] The GIUK is important, yet the Alliance's obligations inside the more constrained waters of the Baltic Sea Region also require attention.

Alliance efforts, to date, lack a well-grounded recognition of the maritime dimension of the challenge.[9] As noted by Atlantic Council analyst Magnus Nordenman, "The maritime domain is increasingly competitive and contested, and the return of geopolitical competition has important maritime dimensions."[10] This missing element has become more salient as the challenge to international norms, collective security, and economic prosperity from the East becomes clearer. The transatlantic community senses that it faces increasing security challenges in the region as a whole and in the maritime domain, in particular. Awareness of its inadequate maritime strategy and resources has increased due to the evolving character of the challenge. This new type of conflict, known as "hybrid warfare" in contemporary literature, is not new, but it certainly seems effective. Whether NATO and the European states want to recognize it, as Admiral Stavridis' epigram suggests, hybrid maritime threats are coming to their neighborhood.

The growing degree of risk and the increasingly tense undercurrents of the region are not well recognized.[11] This paper explores what one analyst called the "Coming Storm" in the Baltic Sea Region, and offers recommendations to ensure that it passes over without severe damage.[12] While not definitive in breadth or its scope, this research project will hopefully catalyze a comprehensive maritime strategy for the Baltic Sea Region and better prepare the NATO Alliance for possible incursions in this congested and contested arena.

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[6] David Shlapak and Michael W. Johnson, "Reinforcing Deterrence on NATO's Eastern Flank," (Santa Monica, CA: RAND, 2016).

[7] Franklin D. Kramer and Bantz J. Craddock, *Effective Defense of the Baltics* (Washington, D.C.: Atlantic Council 2016).

[8] Vice Admiral James Foggo III, "The Fourth Battle of the Atlantic," *Naval Institute Proceedings* (June 2016).

[9] Franklin D. Kramer and Magnus Nordenman, "A Maritime Framework for the Baltic Sea Region," (Washington, D.C.: Atlantic Council, *Issue Paper,* March 2016).

[10] Magnus Nordenman, *The Naval Alliance: Preparing NATO for a Maritime Century*, (Washington, D.C.: The Atlantic Council, July 2015).

[11] Exceptions include Magnus Nordenman, *The Naval Alliance*; Ann-Sofie Dahl, *Baltic Sea Security*, (Copenhagen, Denmark: Centre for Military Studies, University of Copenhagen, 2015); and Katri Pynnoniemi and Charly Salonius-Pasternak, "Security in the Baltic Sea Region, Activation of Risk Potential," (Helsinki: Finnish Institute of International Affairs, *FIIA Briefing Paper 196,* June 2016).

[12] Edward Lucas, *The Coming Storm, Baltic Sea Security Report*, (Washington, D.C.: Center for European Policy Analysis, 2015).

In military and economic terms, the importance of the Baltic Sea is quite significant.[13] During the World Wars and the Cold War, and indeed back to Napoleonic times, it has always been a critical area of competition. Over the past 15 years, the region has experienced a notable level of commercial development. The unique environmental character of the constrained Baltic basin supports dense patterns of shipping and fishing activity. On average, at any time, there are some 2,500 ships underway in the Baltic Sea. It is a main artery of economic activity for almost every nation in the region. It is estimated that forty percent of Russia's international trade transits the Baltic Sea.[14] Although military and security concerns were minimal in the immediate aftermath of the Cold War, over the last few years, the critical vulnerabilities of the region have risen to a more appreciable level.[15]

The Baltic Sea has an area of 160,000 square miles and is bordered by nine countries (See Figure 1). By passing through the Danish straits or via the Kiel Canal through Germany, one can gain access to the North Atlantic. The Danish straits are the three channels connecting the Baltic Sea to the North Sea through the waters of the Kattegat and Skagerrak straits which separate Denmark from Norway, and Denmark from Sweden, respectively. Even though they transect Denmark, the straits are recognized as international waters by the Copenhagen Convention of 1857, which opened access to the Baltic Sea by eliminating the Danish Sound Dues[16] and made them an international waterway free to all commercial and military shipping. The three main passages are Great Belt (*Storebælt),* Little Belt (*Lillebælt)*, and Øresund (*Öresund).*

The straits are one of the world's eight major oil transit choke points and a busy maritime transportation route. Based on 2013 data, more energy passed through this chokepoint than the Suez Canal.[17] More than 3.3 million barrels of hydrocarbon products move through the straits each day. More than 125,000 ships transit the straits each year, with more traffic exiting via the Kiel Canal. The latter is itself an important artery for the region providing a key commercial corridor to the North Sea. The canal is 96 kilometers long and is the most heavily used artificial seaway in the world with an average of 80 ships using the canal per day.[18] The volume of traffic in the region has doubled in the last 20 years, and is expected to double again over the next decade.

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[13] Dahl, *Baltic Sea Security*, pp. 9–22.

[14] Rear Admiral Jens Nykvist, Swedish Royal Navy, in "The Commanders Respond," *Naval Institute Proceedings*, March 2017, p. 26.

[15] Development, Concepts and Doctrine Centre, *Future Security Challenges in the Baltic Sea Region, Future Security Challenges in the Baltic Sea Region* (Shrivenham, UK: DCDC, November 2015).

[16] The Danish Sound Dues were a toll based on cargo value that provided a substantial portion of the Danish Crown's revenue for over four centuries.

[17] Jeremy Bender, "These 8 narrow chokepoints are critical to the world's oil trade," *Business Insider,* April 1, 2015. Available at http://www.businessinsider.com/worlds-eight-oil-chokepoints-2015-4 http://www.businessinsider.com/biggest-oil-chokepoints-2016-11/#the-panama-canal-cuts-through-central-america-to-connect-the-atlantic-and-the-pacific-with-08-million-barrels-passing-through-every-day-1.

[18] 2016 data, excludes small craft. Traffic data available at http://www.kiel-canal.org/english.htm.

Figure 1. Baltic Sea Region. (Map from CIA)

In addition to the transit routes in and out of the region, ports in the Baltic Sea constitute another set of critical economic focal points. Though the region contains nearly 200 ports, only eight are considered major facilities. These ports represent the major shipping outlets for shipping and international trade, and are vital to the economic prosperity of each state. Primorsk, outside of St. Petersburg, is Russia's major outlet for energy shipping. The Baltic Sea Region is also Russia's largest container shipping basin, critical to markets in Germany and elsewhere in Europe. While international port security has improved due to greater attention since September 11, 2001 and the resulting emphasis on terrorism and homeland security, European ports are still vulnerable.[19] Table 1 presents the location and scale of the major Baltic ports.

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[19] Sam Jones, "Europe's ports vulnerable as ships sail without oversight," *Financial Times*, April 5, 2016.

Table 1. Major Baltic Sea Ports

Port	Shipping Volume (tons)
Primorsk, Russia	59, 606,100
Saint Petersburg, Russia	51,513,500
Riga, Latvia	40,055,800
Klaipėda, Lithuania	38,440,000
Gdańsk, Poland	35,913,639
Lübeck, Germany	27,590,000
Ventspils, Latvia	26,206,000
Muuga, Estonia	22,431,200
Szczecin, Poland	19,215,900
Copenhagen, Denmark	18,000,000
Tallinn, Estonia	17,088,000
Gdynia, Poland	14,735,000
Helsinki, Finland	11,410,000
Trelleborg, Sweden	10,336,000

Some of the ports, particularly Primorsk, provide access for key energy distribution networks. Additionally, there are undersea energy pipelines vital to commercial activity and heating in the area. To reduce reliance on Russian energy, several states in the region are diversifying their sources, and one country, Lithuania, has leased a Liquid Natural Gas (LNG) processing facility at Klaipėda.[20] Poland also has an active LNG import capacity at Szczecin. In addition to energy pipelines, the region contains fiber optic cables and other key infrastructure that actors seeking to compete in an ambiguous and unconventional manner could target.[21]

Regional Vulnerabilities

One must understand the region's vulnerabilities in order to see the importance of this assessment. Military analysts tend to focus on hard threats and look at conventional force balances to assess threats. Though germane, those types of threats are not the only type of security vulnerability to consider, especially when examining more ambiguous and indirect threats. Regional experts have identified a number of maritime vulnerabilities. These are covered more extensively by another effort conducted by the University of Copenhagen's Centre for Military Studies and are briefly listed here.[22]

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[20] "Poland and the Baltics Find New Energy Options," *STRATFOR*, October 1, 2015. Available at https://www.stratfor.com/analysis/poland-and-baltics-find-new-energy-options.

[21] David Sanger and Eric Schmitt, "Russian Ships Near Data Cables Are Too Close for U.S. Comfort," *The New York Times*, October 25, 2015. Available at http://www.nytimes.com/2015/10/26/world/europe/russian-presence-near-undersea-cables-concerns-us.html.

[22] Martin Murphy, Frank Hoffman, and Gary Schaub, Jr., *Hybrid Maritime Warfare and the Baltic Sea Region*, (Copenhagen, Denmark: University of Copenhagen, Centre for Military Studies, November 2016), pp. 11–19; Gary Schaub, Jr., Martin Murphy, and Frank Hoffman, "Hybrid Maritime Warfare: Building Baltic Resilience," *RUSI Journal*, vol. 162, Issue 1, 2017, pp. 32–40.

- *Sea Lanes and Freedom of Navigation.* Access into the region via the straits, Kiel Canal, and the littoral islands are a part of this particular vulnerability.[23]

- *Energy Hubs/Critical Infrastructure.* The region hosts numerous oil refineries and liquid natural gas terminals in Russia, Poland, and Lithuania.[24]

- *Ports and Transportation Links.* While international port security has received greater attention, European ports are still assessed as vulnerable.[25]

- *Undersea Infrastructure.* The presence of both fiber optic communications cables and the Gazprom undersea pipeline in the region is important to the regional economy. Some regional observers believe that the undersea infrastructure of the region is vulnerable.[26]

- *Commercial Activities/Fishing Protection.* The region is host to numerous commercial shipping companies including Maersk and remains a heavily trafficked sailing and fishing area.

- *Information Domain.* This area is obviously critical to secure and safe navigation, energy distribution, transportation, etc. But more importantly, states, state-dominated "news sources," and criminal organizations can exploit it.

- *Political Integrity/Social Resilience.* Moscow can exploit or manipulate the presence of Russian ethnic minorities in the Baltics to undercut the sovereignty and stability of several states in the area.[27]

Russia's Regional Actions and Capabilities

Regional officials have a number of reasons to be concerned about Russia, outside of its actions in Ukraine. Russia's so-called "Snap" exercises close to the borders of Poland and the Baltic states are one such concern. Russia used the exercises to makes its incursion into eastern Ukraine in 2014 and reflect a technique used several times during the Cold War. These drills continue to test and demonstrate the heightening readiness of Russia's military.[28] In October 2014, Sweden conducted a major hunt for a foreign submarine, suspected to be Russian, off of the coast of Stockholm. The military subsequently confirmed "a mini submarine" had violated its territorial waters.[29] In 2016, a Swedish naval exercise detected undersea activity as well. Violations of airspace in the region are almost a daily occurrence. In March 2015, Russia conducted exercises using a scenario in which it attacked the Swedish island of Gotland, the Danish

[23] Daniel Kochis and Luke Coffey, "Swedes Reinforce Gotland Against Russian Invasion," *Newsweek*, October 1, 2016. Available at http://europe.newsweek.com/swedes-reinforce-gotland-against-russian-invasion-503878?rm=eu.

[24] Stavridis, "Hybrid Maritime Warfare is Coming," p. 32.

[25] Sam Jones, "Europe's ports vulnerable as ships sail without oversight," *Financial Times*, April 5, 2016.

[26] Lisa Sawyer Samp, Jeffrey Rathke, and Anthony Bell, *Perspectives on Security and Strategic Stability* (Washington, D.C.: Center for Strategic and International Studies, October 2016), p. 14.

[27] Murphy, Hoffman, and Schaub, *Hybrid Maritime Warfare and the Baltic Sea Region,* p. 11.

[28] Jorgen Elfving, "Russia's June 2016 Snap Exercise: Same Old Story, but With a New Touch," *Eurasia Daily Monitor*, vol. 13, Issue 117, June 29, 2016. Available at https://jamestown.org/program/russias-june-2016-snap-exercise-same-old-story-but-with-a-new-touch/#sthash.pJBAsIle.dpuf.

[29] Peter Walker, "Sweden searches for suspected Russian submarine off Stockholm," *The Guardian*, October 19, 2014. Available at https://www.theguardian.com/world/2014/oct/19/sweden-search-russian-submarine-stockholm; and Elizabeth Braw, "Submarine Intruders on Sweden's Coastline," *World Affairs, Journal*, September 29, 2015. Available at http://www.worldaffairsjournal.org/blog/elisabeth-braw/submarine-intruders-sweden%E2%80%99s-coastline.

island of Bornholm, and the Finnish Aland Islands. [30] These exercises have led to the exploration of ways to better defend these sovereign entities and preclude them from being used to conduct a Russian campaign against NATO or its partners. Russia has also attempted to intimidate NATO forces in the region, as evidenced when a Russian fighter provocatively "buzzed" the American destroyer USS *Donald Cook* at low altitude when it was operating in the Baltic Sea in April 2016.[31]

Russian behavior does not limit its threats to merely sub-conventional weapons. In addition to frequent intrusions into Finnish and Swedish waters and airspace, Russia has warned of "serious consequences" should either country officially join NATO.[32] Putin and various spokesmen rhetorically threatened neighbors with Russia's nuclear saber with "specific threats, including many by Putin himself, the likes of which have not been heard since the days of Nikita Khrushchev."[33] The conduct of nuclear exercises with mock attacks on Sweden and Poland subtly reinforce Russian rhetoric.[34]

European concerns about regional security are magnified by Russia's announced military modernization program, especially as Russia's investments come in the face of a recession and depressed energy prices.[35] The expansion of the Russian military has been limited quantitatively, but there are clear qualitative improvements.[36] Naval modernization has produced several new classes of ships, many with advanced anti-ship cruise missiles.[37] In addition to the buildup of forces along Russia's periphery, Moscow has significantly enhanced its military exclave in the province of Kaliningrad; it is a Russian territory that was annexed in 1945 from Germany and is sandwiched between Poland and Lithuania along the Baltic coast. Its major city, also known as Kaliningrad, is the former German city of Koenigsberg. The capabilities Russia has invested in include the S-400 integrated air defense system and Iskander surface-to-surface missiles, which are capable of reaching well out into the Baltic Sea.[38] The buildup of Russia's conventional defensive

[30] Wojciech Lorenz and Szymon Zareba, "Aland Islands' Significance to Security in the Baltic Sea Region," *Bulletin No. 72*, (Warsaw: Polish Institute of International Affairs, November 7, 2016).

[31] The same ship was flown over in 2014 in the same region. See, Thomas Gibbons-Neuf, "A Strange Recent History of Russian Jets Buzzing Navy Ships," *The Washington Post*, April 14, 2016. Available at https://www.washingtonpost.com/news/checkpoint/wp/2016/04/14/a-strange-recent-history-of-russian-jets-buzzing-navy-ships/.

[32] Jorge Benitez, "The Bully to the East," *US News and World Report*, August 6, 2015.

[33] Franklin Miller, Statement to the Senate Armed Services Committee on Future Nuclear Posture, January 26, 2016.

[34] John Grady, "Panel: Russian Nuclear Saber Rattling Prompting NATO to Rethink Its Role," *USNI News,* January 28, 2016. Available at https://news.usni.org/2016/01/28/panel-russian-nuclear-saber-rattling-prompting-nato-to-rethink-its-role.

[35] On Russia military modernization, see, the testimony of the U.S. Director of National Intelligence, James Clapper, Statement before the Senate Armed Service Committee, Worldwide Threat Assessment, February 18, 2016. For European perspectives, see, the committee report of the NATO Parliamentary Assembly, *Russian Military Modernization*, Science and Technology Committee Report, Brussels, 2015; as well as the annual data in International Institute for Strategic Studies, *Military Balance, 2016* (London: IISS, 2016), pp. 8, 25–26, 163–177.

[36] Dmitri Trenin, "The Revival of the Russian Military" *Foreign Affairs*, May/June 2016, pp. 23–29.

[37] U.S. Navy, *The Russian Navy: A Historic Transition*, (Washington, D.C.: Office of Naval Intelligence, 2015). For a projection of Russian naval programs, see, Dmitry Gorenburg, "Russian Naval Shipbuilding: Is It Possible to Fulfill the Kremlin's Grand Expectations?" (Washington, D.C.: PONARS Eurasia, *Policy Memo: 395*, October 2015). Available at http://www.ponarseurasia.org/memo/russian-naval-shipbuilding-it-possible-fulfill-kremlins-grand-expectations.

[38] On the Iskander ballistic missile system, see, http://www.military-today.com/missiles/iskander.htm.

capabilities in Kaliningrad complicates NATO's responses to crisis in the Baltic region.[39] Allegedly, Russia deployed its Bastion coastal defense system in Kaliningrad in fall 2016. This system employs the supersonic Onyx anti-ship missile with a range of 600 kilometers. It is reported that Moscow moved two *Buyan*-class corvettes armed with Kalibr (NATO terminology: SS-27 Sizzler) cruise missiles to the area.[40]

The establishment of robust air defense networks, long-range missile systems, and reinforced ground defense units give Moscow a much improved defense and a potential base for force projection. These upgrades present a material anti-access challenge to Alliance forces and can potentially disrupt operations in a crisis.[41] The scale of the buildup suggests that either Russian leaders think that Kaliningrad is vulnerable, or it signals that Russian policymakers intend to exploit the exclave to preclude NATO's reinforcement of the region.[42] Western analysts realize that the buildup diminishes the Alliance's deterrence by precluding their ability to threaten the introduction of forces to the region.[43]

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[39] Stephan Frühling and Guillaume Lasconjarias, "NATO, A2AD, and the Kaliningrad Challenge," *Survival*, vol. 58, no. 2 (April/May 2016), pp. 95–116.

[40] "Kaliningrad: New Russian missile deployment angers Nato," *BBC*, November 22, 2016. Available at http://www.bbc.com/news/world-europe-38070201.

[41] Sydney J. Freedberg Jr., "Russians in Syria Building A2/AD 'Bubble' Over Region: Breedlove," *BreakingDefense*, September 28, 2015.

[42] Guillaume Lasconjarias and Alessandro Marrone, "How to Respond to Anti-Access/Area Denial (A2/AD)? Towards a NATO Counter-A2AD Strategy," (Rome: NATO Defense College, *Conference Report No. 01/16*, February 2015); and Mikkel Vidbey Rasmussen, "A2/AD in Baltic Security," in Dahl, *Baltic Sea Security*, (Copenhagen: Centre for Military Studies, University of Copenhagen, 2015).

[43] Stephan Fruhling and Guillaume Lasconsjarias, "NATO, A2AD and the Kaliningrad Challenge," *Survival,* vol. 58, no. 2 (April-May 2016), pp. 95–116; and Neil MacFarquhar, "Russia's Separate Piece is Setting Off Alarms about a Baltic Conflict," *The New York Times,* April 17, 2016, p. 5.

Figure 2. Russian Missile Envelops from Kaliningrad[44]

Of particular relevance to Northern Europe is the modernization and deployment of Russian submarines. NATO forces are facing "more activity from Russian submarines than we've seen since the days of the Cold War," according to Vice Adm. Clive Johnstone, Royal Navy, commander of NATO's Maritime Command.[45] The same sources suggest that qualitative changes in Russian submarines are evident, presenting "a level of Russian capability that we haven't seen before." U.S. naval officials mirrored this assessment.[46] Russia has minimal traditional submarine capacity presently inside the Baltics. But it is not limited to its current order of battle and can redeploy assets from the North Fleet at will if it desires to do so.[47] However, at this time, it appears more likely that it will employ smaller vessels

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[44] Munich Security Conference Report, *Post-Truth, Post-West, Post Order?* (Munich, Germany, 2017), p. 27.

[45] Thomas Gibbons-Neff, "Russia readies two of its most advanced submarines for launch in 2017," *The Washington Post,* December 29, 2016. Available at https://www.washingtonpost.com/news/checkpoint/wp/2016/12/29/russia-readies-two-of-its-most-advanced-submarines-for-launch-in-2017/?utm_term=.cdca56cf3020.

[46] David Mumjuhar, "NATO's Nightmare," *The National Interest*, February 2, 2015. Available at http://nationalinterest.org/blog/the-buzz/natos-nightmare-russian-sub-activity-rises-cold-war-levels-15096.

[47] Eric Schmitt, "Russia Bolsters Its Submarine Fleet, and Tensions With U.S. Rise," *The New York Times*, April 20, 2016. Available at http://www.nytimes.com/2016/04/21/world/europe/russia-bolsters-submarine-fleet-and-tensions-with-us-rise.html?_r=0; and Norm Polmar and Michael Kofman, "Impressive Beneath the Waves," *Naval Institute Proceedings*, February 2016, pp. 64–65.

from its naval special forces to conduct the kinds of operations more consistent with "hybrid warfare." It could also exploit many commercial vessels that transit the region. These vessels present the element of surprise, ambiguity, and non-attribution that are consistent with the Russian version of hybrid threat activity. Russia can easily mix these vessels amongst the dense networks of commercial activity in the region to mask their approach. Russia will employ such operations for intelligence gathering, intimidation, and sabotage of critical infrastructure or neutralization of shipping.

The small but growing Russian fleet of attack submarines warrants some attention.[48] Russia is making steady progress with respect to both the number and quality of its undersea capabilities. But large conventional submarines will not be comfortable operating in the confined space of the Baltic Sea, and do not often operate there. But NATO and the West should not overlook the small squadron of more agile and ambiguous undersea research boats, which might be a better platform for Russia's hybrid tactics. Also, Russia is developing a family of unmanned surface and underwater vehicles. While the U.S. Navy has developed naval drones for more than a decade, this is the first indication that Moscow is working on similar capabilities.[49] The ambiguous character of these "auxiliary" vessels fits well into the modern version of Russian concepts of indirect conflict. The combination of covert activity, maritime sabotage, and economic warfare fits that pattern, as does the use of undersea warfare capabilities.

Moscow keeps an inventory of six to ten of these submarines in various locations and is upgrading them. In April 2015, a report from a Russian-language military site was released, revealing that Russia's three *X-Ray*-class submarines, used in the past for covert intelligence tasks, were being upgraded at a shipyard. In 2014, Russia announced that future designs for its *Sarov* Unmanned Underwater Vehicle (UUV) included missiles, mines, and torpedoes.[50] Russia can use these small submersibles for covert infiltration activities in shallow littoral waters. Of equal concern is the use of these vessels to emplace undersea sensors or compromise undersea communication or energy networks. NATO and regional military planners should be aware of their potential employment.

Naturally, the Russian Navy includes naval special operations capabilities, including a battalion of Naval Spetsnaz in each fleet. These were prominently used in the Crimean *coup de main*.[51] The Russian naval *Spetsnaz* unit in the Baltic Fleet is officially the 561st Detached Naval Reconnaissance Point.Category: Eurasia Daily Monitor, Home Page, Featured, Military/Security, Russia

Elements of these units/points are capable of a wide range of unconventional tactics and can employ midget submarines.

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[48] For balance on this issue, see, Michael Kofman, "Russia's Submarine Program: How Big a Threat?" *CNN.com*, April 24, 2016.

[49] David Manjumdar, "American vs. Russia: The Race for Underwater Spy Drones," *The National Interest*, January 2016. Available at http://nationalinterest.org/blog/the-buzz/america-vs-russia-the-race-underwater-spy-drones-14981; and http://www.navaldrones.com/Russian-Naval-Drones.html.

[50] Kathleen Weinberger, "Sight Unseen: Russian Auxiliary Submarines and Asymmetric Warfare in the Undersea Domain," *For Your Situational Awareness* blog, March 31, 2016. Available at http://fysa.csis.org/2016/03/31/sight-unseen-russian-auxiliary-submarines-and-asymmetric-warfare-in-the-undersea-domain/.

[51] Mark Galeotti, *Russian Special Forces*, (Oxford: Osprey, 2015), pp. 28-45; and Roger McDermott, "Putin's Secret Force Multiplier: Special Operations Forces," *Eurasia Daily Monitor,* vol. 13, Issue 81, April 26, 2016.

Russia's vast mine inventory presents the resources needed to potentially block reinforcing forces from accessing the Baltic Sea through the Danish Straits or outside the smaller Baltic states. The seeding of mines from nontraditional delivery platforms (commercial fishing vessels) could block key commercial centers in Germany, Denmark, or Poland. Russia can use these techniques to coerce allied or partner states from participating in the defense of the region, or disrupt or completely block NATO forces from responding to an emergency. NATO has retained standing forces to confront this challenge, which exercise regularly.[52]

Russia's Hybrid Threat Challenge

While NATO and European military analysts reflexively focus on the high-end items of Russia's hardware, they should also focus attention on unconventional methods used commonly during the Cold War and are conceivably still relevant to a comprehensive assessment of possible threats in the Baltic Sea Region. Some scholars have called these methods "New Warfare" based on observations from numerous journalists and Russian sources.[53] Other analysts describe Russia's behavior as reflecting an example of "hybrid warfare."[54] NATO's interpretation of hybrid warfare depicts it as a mixture of military means with non-military tools including propaganda and cyber activity. To NATO officials, hybrid warfare is "where a wide range of overt and covert military, paramilitary, and civilian measures are employed in a highly integrated design."[55] This depiction describes a combination of political and unconventional instruments of coercion and influence.[56] These activities entail the coercive use of military force and more subtle forms of malign influence in the political and informational domain.[57] As noted by former Commander of U.S. European Command General Philip Breedlove, the Kremlin's use of hybrid methods combines an array of diplomatic, economic, information, and security tools short of war with Moscow's efforts to undercut the rules of international order.[58]

In historical terms, there is certainly nothing novel about hybrid challenges. This fact is especially true with respect to Russia. These are actually time-tested methods with which the U.S. security community has seen before, but has forgotten how to counter.[59] What is clear is that a new generation of leaders, spawned within the KGB, is applying

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[52] Sydney J. Freedberg, "Minefields at Sea: From the Tsars To Putin," *Breaking Defense*, March 23, 2015.

[53] John Haines, "Putin's New Warfare," *FPRI E-Notes*, May 2014. Available at http://www.fpri.org/article/2014/05/putins-new-warfare/. According to Haines' detailed assessment, "New Warfare" employs four tactics. The first is to use noncombatants, especially women and children as "human shields." To this, the Russians add a media component to control the narrative and "accuse others of what you are doing yourself." Third is the employment of *provocateurs* masquerading as local irregular forces. Fourth, psychological pressure is applied to capture the mind of "liberated" populations that attack Russia's enemies via ethnic cleansing, and form "a human shield" between Russia and "enemy" troops. This is close to what Russian military authors and U.S. Army analysts are calling New Generation Warfare.

[54] *Strategic Survey 2014, The Annual Review of World Affairs* (London: Institute for International Strategic Studies, 2014), pp. 53–64; and "Hybrid Warfare: Challenge and Response," *Military Balance* (London: Institute for International Strategic Studies, 2015), pp. 17–20.

[55] Wales NATO Summit Communique, September 4, 2014. Available at http://www.nato.int/cps/en/natohq/official_texts_112964.htm?selectedLocale=en.

[56] For an invaluable analysis, see, Michael Kofman and Matthew Rojansky, "A Closer Look at Russia's Hybrid War," *Kennan Cable No. 7*, (Washington, D.C.: Woodrow Wilson Center, April, 2015).

[57] Michael Birnbaum, "Russian's Tactics Roil Europe," *The Washington Post*, August 14, 2016, p. 1; Helene Cooper, "Russia is Sternly Warned to Stay Out of U.S. Election," *The New York Times*, September 8, 2016, p. A6. See, the Joint Statement of the Department of Homeland Security and Director of National Intelligence, Washington, D.C., October 7, 2016. Available at https://www.dhs.gov/news/2016/10/07/joint-statement-department-homeland-security-and-office-director-national.

[58] General Philip M. Breedlove, Testimony before the Senate Armed Services Committee, March 1, 2016.

[59] Ben Connable, Jason H. Campbell, and Dan Madden, *Stretching and Exploiting Thresholds for High-Order War* (Santa Monica, CA: RAND, 2016).

longstanding Russian concepts of protracted conflict from the Cold War.[60] Russia's understanding of conflict reflects a full spectrum approach, which includes employment measures short of war or more violent hybrid approaches appropriate to the situation.[61] NATO recognizes Russia's multi-faceted approach, and the NATO Defense College is at the forefront of thinking on the issue.[62] European analysts are also studiously examining the implications.[63] As noted by the German government in their latest defense white paper, hybrid threats call for unique analytical and corresponding defense capabilities in the 21st century.[64]

Events in Crimea and eastern Ukraine have required European security officials to devote considerable attention to Russia's assertive behavior and its approaches to conflict. For this reason, so-called "hybrid warfare" is now an explicit discussion point at NATO.[65] In the Crimea example, Russia demonstrated that it had learned from its performance in Georgia in 2008, employing inherently conventional methods, but with better agility and illegal methods.[66] In a *coup de main* against Crimea, Russia used its Special Forces and sank a ship to block the port of Sevastopol.[67] Such tactics should be anticipated and implications assessed in order to prepare a more resilient defense. This tactic was hardly new or "ambiguous," but it was effective under unique circumstances that are not easily replicated elsewhere, including the Russian-speaking areas of the Baltic states.

The Russian leadership under Mr. Putin is not inventing a new approach to warfare, nor is it producing something rare in Russian strategic culture.[68] Indeed, the new generation of leaders, spawned within the KGB (now morphed into the *Federal'naya sluzhba bezopasnosti* or FSB), are clearly applying longstanding Russian protracted conflict concepts from the Cold War.[69]

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[60] Robert Strauz-Hupe and William Kintner, *Protracted Conflict* (Philadelphia, PA: Foreign Policy Research Institute, 1959), *passem*.

[61] Oscar Jonsson and Robert Seely, "Russian Full-Spectrum Conflict: An Appraisal after Ukraine," *Journal of Slavic Military Studies*, vol. 28, March 2015.

[62] Guillaume Lasconjarias and Jeffrey A. Larsen, eds., *NATO's Response to Hybrid Threats* (Rome: NATO Defense College, 2015); and Andreas Jacobs and Guillaume Lasconjarias, "NATO's Hybrid Flanks: Handling Unconventional Warfare in the South and the East," (Rome: NATO Defense College, *Research Paper No. 112*, April 2015).

[63] See, András Rácz, "Russia's Hybrid War in Ukraine: Breaking the Enemy's Ability to Resist," *FIIA Report 43* (Helsinki, Finland: The Finnish Institute of International Affairs, 2015); and Phillip A. Karber, "Russian Style Hybrid Warfare," (McLean, VA: The Potomac Foundation, January 20, 2015).

[64] German Federal Government, *White Paper 2016: On German Security Policy and the Future of the Bundeswehr*, (Berlin, Germany, July 2016), p. 38. Available at https://www.bmvg.de/portal/a/bmvg/en.

[65] Anders Fogh Rasmussen quoted in Mark Landler and Michael Gordon, "NATO Chief Warns of Duplicity by Putin on Ukraine," *The New York Times*, July 8, 2014, A11.

[66] Sam Jones, "Ukraine: Russia's new art of war," *FT.Com*, August 28, 2014. Available at http://www.ft.com/cms/s/2/ea5e82fa-2e0c-11e4-b760-00144feabdc0.html#ixzz3O01r9qjy; and Yuri Drazdow "Modern hybrid war, by Russia's rules," *Minsk Herald*, November 3, 2014. Available at http://minskherald.com/2014/11/russian-new-military-doctrine/.

[67] Sergei L. Loiko, "Russians sink a boat off Ukraine coast - their own," *Los Angeles Times*, March 5, 2014. The Russians scuttled the decommissioned cruiser *Ochakov* in the mouth of the Donuzlav channel which trapped the majority of Ukraine's southern fleet from getting out to the Black Sea.

[68] Charles L. Barry and Julian Lindley-French, "NATO and Europe," in R. D. Hooker, Jr., ed., *Charting a Course: Strategic Choices for a New Administration* (Washington, D.C.: NDU Press, 2016).

[69] Robert Strauz-Hupe and William Kintner, *Protracted Conflict*.

Any discussion of challenge from Russia must also incorporate that nation's distinctive emphasis on disinformation and malicious cyber activity. Distortion, distraction, and disinformation are central to Moscow's approach.[70] Moscow has long excelled at weaponizing information, money, and energy to benefit its position.[71] The West has decades of experience with Russian subversion in the past, but current levels of expertise need to be coordinated to exploit the information age tools that (ironically) the West had originally developed.[72] The exploitation of political groups, fake news, distortion, and economic influence to neutralize or "capture" a state are all techniques perfected by Moscow.[73] Russia choreographs these acts to confuse an opponent with ambiguous means and intent, making it hard for NATO to respond.[74] Not content to draw on long practice, Russians have updated their Active Measures for the 21st century. As FPRI Senior Fellow Clint Watts notes,

> Soviet Active Measures strategy and tactics have been reborn and updated for the modern Russian regime and the digital age. Today, Russia seeks to win the second Cold War through 'the force of politics as opposed to the politics of force.' As compared to the analog information wars of the first Cold War, the Internet and social media provide Russia cheap, efficient and highly effective access to foreign audiences with plausible deniability of their influence.[75]

Given the effect that the Russians seek in undercutting stability and increasing their influence along their border, deflecting these measures will be a growing security challenge for NATO and the EU.

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[70] Frederik Van Lokeren, "Countering the Information War in the Baltic states." *Baltic Defense*, April 2, 2015. Available at http://balticdefense.blogspot.com/2015/04/countering-information-war-in-baltic.html.

[71] Michael Weiss and Peter Pomerantsev, "The Menace of Unreality. How the Kremlin Weaponizes Information, Culture and Money," *The Interpreter*, November 22, 2014. See also, Peter Pomerantsev, *Nothing Is True and Everything Is Possible: The Surreal Heart of the New Russia* (New York: PublicAffairs, 2014); and Jolanta Darczewska, "The Anatomy of Russian Information Warfare: The Crimean Operation, A Case Study," (Warsaw: Centre for Eastern Studies, May, 2014).

[72] U.S. Information Agency, *Soviet Active Measures in the "Post-Cold War" Era 1988-1991*, (Washington, D.C.: USIA, June 1992); and Victor Madeira, "Russian Subversion: Haven't We Been Here Before?," Institute for Statecraft, July 30, 2014. Available at http://www.statecraft.org.uk/research/russian-subversion-havent-we-been-here. On U.S. initiatives to counter "active measures," see, Fletcher Schoen and Christopher J. Lamb, *Deception, Disinformation, and Strategic Communications: How One Interagency Group Made a Major Difference* (Washington, D.C.: NDU Press, 2012).

[73] Edward Lucas and Peter Pomeranzev, *Winning the Information War: Techniques and Counter-strategies to Russian Propaganda in Central and Eastern Europe* (Washington, D.C.: Center for European Policy Analysis, August 2016); and Heather Conley, James Mina, Ruslan Stefanov, and Martin Vladimirov, *The Kremlin Playbook: Understanding Russian Influence in Central and Eastern Europe* (Washington, D.C.: Center for Strategic and International Studies, 2016).

[74] "What Russia Wants: From Cold War to Hot War," *Economist*, February 14, 2015. Available at http://www.economist.com/news/briefing/21643220-russias-aggression-ukraine-part-broader-and-more-dangerous-confrontation.

[75] Clint Watts, "Disinformation: A Primer in Russian Active Measures and Influence Campaigns," prepared testimony before the Senate Select Committee on Intelligence, March 30, 2016, p. 2. See also, Dr. Thomas Rid, "Disinformation: A Primer in Russian Active Measures and Influence Campaigns," testimony before the Senate Select Committee on Intelligence, March 30, 2016.

NATO's Capabilities and Response

The potential for serious interference in the region is not overlooked by NATO officials. The Secretary General of NATO has called upon the members of the Alliance to better prepare themselves to counter hybrid threats more effectively.[76] Without such a response, Russia could destabilize or draw NATO and other countries into an overt conflict. The convergence of methods of attack and the targeting of critical commercial or non-military targets inherent to hybrid warfare has not escaped NATO either. As one Alliance flag officer has noted, "From a maritime perspective we see extensive underwater research programs underway that can lead to disruption of underwater communication cables, we see the use of civilian and merchant vessels for mine laying and obstruction of harbours, and we see civilian fishing vessels carrying SAM threats."[77] While there is a growing recognition of the need to deflect hybrid threats against NATO members and others, the dense interactions of the Baltic Sea Region pose a target for more unconventional and sophisticated forms of hybrid threats.[78]

Naval Capabilities Comparison

In terms of naval platforms, NATO and its partners hold a substantial symmetrical advantage, as shown in Table 2.[79] Overall, NATO maritime capabilities are impressive, but are stretched across tasks from the Arctic, Mediterranean, and Persian Gulf, to off the coast of Africa.[80]

Table 2. Regional Naval Order of Battle

	Russia (Baltic Fleet)	**Germany**	**Poland**	**Denmark**	**Sweden**	**Finland**
Guided Missile Destroyers	2	7	\	3	\	\
Frigates	1	8	2	\	\	\
Corvette	6	\	\	4	5	\
Submarines	1	5	5		5	\
Patrol Boats	18	6	4	9	16	8
Mine Counter-Measure Ships	15	12	21	6	10	10
Amphibious	4	2	5	\	\	\

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[76] Advisory Panel on the NATO Summit 2016, "NATO in a World of Disorder: Making the Alliance Ready for Warsaw," (Washington, D.C.: German Marshall Fund of the United States, March 2016).

[77] Rear Admiral Thomas Ernst, German Navy, "Agile Command and Control in a Degraded Environment," Conference Paper, October 4, 2016, p. 18. I am indebted to Dr. Gary Schaub for this.

[78] Advisory Panel on the NATO Summit 2016, "NATO in a World of Disorder," pp. 12–14; and Juliane Smith and Jerry Hendrix, *Assured Resolve: Testing Possible Challenges to Baltic Security* (Washington, D.C.: Center for a New American Security, 2016), p. 5.

[79] IISS, *Military Balance* (London: Routledge, 2016); Office of Naval Intelligence, *The Russian Navy*, *A Historic Transition* (Washington, D.C.: U.S. Navy, December 2015).

[80] See, Diego Ruiz Palmer's chapter on NATO's "maritime renaissance" in Joachim Krause and Sebastian Bruns, eds., *Routledge Handbook of Naval Strategy and Security* (London: Routledge, 2016).

The conventional order of naval battle favors the Alliance and could soon improve. The German Navy is the most potent with 15 surface combatants and five submarines in its fleet,[81] and it is developing greater capacity, including more modern corvettes and submarines.[82] It is highly professional, but currently under significant strain due to reduced funding and strategic emphasis.[83] However, a recent announcement shows that Berlin recognizes the need to protect the nation's vital sea lines of communication. Germany will soon commission its new 7,200-ton Type 125 Baden-Wurttemberg frigate with three additional ships planned by 2020. It also plans to buy additional corvettes, and will field three new air independent propulsion-capable Type 212A submarines as well. [84] The first of this set was commissioned in late 2016. More recently, the German Navy has initiated a Baltic Maritime Component Command in its port of Rostock to provide the necessary command architecture for NATO operations in the region.[85]

The Polish Navy has also established an ambitious naval modernization program, with a budget of over $4 billion by 2030. Without this major investment, the Polish Navy would lose nearly half of its operational fleet. It plans to acquire three "Kormoran 2" mine hunters, three "Miecznik" coastal defense vessels, three "Czapla" mine hunting patrol vessels, and three submarines.[86] Poland's leadership is increasingly focused on its maritime security, and recently published a strategic concept to guide its efforts to minimize its maritime vulnerabilities.[87] Additionally, Poland might purchase three submarines and even lease some immediately to begin to build up its capability in undersea warfare.[88]

Partners like Finland are also stepping up their efforts to improve defenses. In late 2016, Finland announced plans to extend its anti-surface and anti-submarine capabilities with the purchase of four new patrol vessels.[89]

NATO resources will augment these regional forces in a crisis, including the quite considerable naval assets of the United States, the United Kingdom, and France. However, a traditional naval ship count is not the best measure of the relative strength of assets in the region since land-based strike and intelligence, surveillance, and reconnaissance (ISR) assets can serve as enablers or force multipliers, especially as part of an integrated strategy. Given the congested and shallow littorals of the region, a singular domain comparison is less meaningful, and less relevant, if an adversary is comfortable with unconventional methods and platforms. So Russian and NATO naval order of battle inventories are necessary, but not sufficient, to assess the Baltic Sea Region.

Two recent NATO Summits, both in Wales and Warsaw, have focused on the threat posed by Russia to the post-Cold War order. These two meetings have materially enhanced a consensus on the scope of the problem and NATO's responses in terms of force posture and interoperability.

[81] Magnus Nordenmann, "From Submarines to Smuggler Skiffs," *Naval Institute Proceedings*, vol. 143, No. 3, March 27, 2017, p. 57.

[82] Jurgen Mannhardt, "Breaking With Tradition: Future German Naval Developments," *Naval Forces*, vol. 37, no. 4, 2016, pp. 38–43; Lars Hoffmann, "German Budget Committee Approves Five Corvettes," *Defense News*, November 12, 2016. Available at http://www.defense-news.com/articles/germanys-budget-committee-approves-five-new-corvettes.

[83] Sebastian Bruns, "The Baltic Sea and Current German Naval Strategy," Center for International Maritime Security, July 2016. Available at http://cimsec.org/baltic-sea-current-german-navy-strategy/26194.

[84] Eric Wertheim, "World Navies in Review," *Naval Institute Proceedings*, vol. 143, No. 3 (March 2017), p. 69.

[85] Magnus Nordenman, "Back to the North: The Future of the German Navy in the New European Security Environment," (Washington, D.C.: Atlantic Council, Issue Brief, April 2017).

[86] On Polish modernization, see, IISS, *Military Balance*, (London: IISS, 2016), pp. 68–77; and IISS, *Military Balance*, (London: IISS, 2017), pp. 112–127. Also see, http://www.diplomaatia.ee/en/article/beyond-air-and-missile-defense-modernization-of-the-polish-armed-forces/.

[87] Andrzej Duda, *Poland's Strategic Concept for Maritime Security*, (Warsaw, 2017). (English translation)

[88] Wertheim, "World Navies in Review," pp. 70-71.

[89] Peter Felstead, "Northern Composure, Finish Procurement," *Jane's Defense Weekly*, April 19, 2017, pp. 24–31.

NATO has designed and has started to implement a Readiness Action Plan (RAP) that includes greater military activity in the eastern part of the Alliance's territory. The RAP includes both "assurance measures" and longer-term "adaptation measures" to NATO's force posture, which can be best described as deterrent enhancements. The assurance measures increased military presence and readiness will demonstrate the Allies' resolve to react rapidly and decisively when required. These measures are a series of land, sea, and air activities in, on, and around the territory of NATO Allies in Central and Eastern Europe and Turkey, and they seek to reassure their populations and deter potential aggression. They include a greater number of air-policing patrols, the rotational deployment of ground troops to the eastern parts of the Alliance for NATO training and exercises, greater airborne surveillance, and maritime patrol flights. In the Baltic Sea Region, the plan calls for intensified NATO maritime patrols by the Standing NATO Maritime Group and Standing NATO Mine Counter-Measures Group.

Adaptation measures are longer-term changes to NATO's forces and command structure that improve the Alliance's ability to react swiftly and decisively to sudden crises. The effort has centered on making the NATO Response Force (NRF) more responsive and capable. In 2015, the size of the NRF roughly tripled, from 13,000 to about 40,000 troops. This enhanced NRF includes land, sea, air, and Special Forces components. Within the NRF, a new quick-reaction "Spearhead Force" (Very High Readiness Joint Task Force or VJTF) of around 20,000 troops, of which about 5,000 are ground forces, is now operational and is ready to move within days. The VJTF participated in its first deployment exercise: Noble Jump in Poland in 2015 and was exercised again during Exercise Trident Juncture. NATO has also created multinational NATO command headquarters—or "NATO Force Integration Units" (NFIUs) on the territories of eastern Allies. These NFIUs were activated in September 2015 and were established to improve coordination between NATO and national forces, and support exercises and deployments if and when needed.[90]

Over the past two years, the United States has taken numerous steps including substantial funding for increased capability to assure our allies in Europe and to demonstrate our commitment to NATO. The U.S. Defense Department has grouped its activities into a multi-year program known as Operation Atlantic Resolve.[91] These activities include exercises, equipment transfers, and, now, the forward deployment of U.S. combat units. They demonstrate support for NATO's collective defense and the Baltic region and focus on deterring Russia from its aggressive and destabilizing behavior.[92] To augment deterrence, the frequency and complexity of exercises with NATO allies and partners increased to bolster interoperability and the credibility of regional forces. Additionally, the U.S. air, ground, and naval presence in the region increased.

To further demonstrate its support, the Obama administration developed and funded a European Reassurance Initiative (ERI). It was funded at less than $800 million in FY 2016, but the budget request for FY 2017 includes a quadrupling in ERI funding to approximately $3.42 billion. This funding will increase five main lines of effort: increased rotational presence; additional bilateral & multilateral training with allies and partners; enhanced prepositioning of U.S. equipment; improved infrastructure; and intensified efforts to build capacity with newer NATO allies and partners.[93] Almost none of this funding was allocated to the U.S. Navy.

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[90] NATO, Fact Sheet: NATO Readiness Action Plan, (Brussels: NATO Headquarters, June 2016). Available at http://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_06/20160614_1606-factsheet-rap-en.pdf.

[91] For more information, see, https://www.defense.gov/News/Special-Reports/0514_Atlantic-Resolve/.

[92] U.S. European Command, "Operational Atlantic Resolve-Fact Sheet," 2016; and Department of Defense, "Special Report: America's Enduring Commitment to European Security: Operational Atlantic Resolve." Available at http://www.defense.gov/News/Special-Reports/0514_Atlantic-Resolve.

[93] The White House, Fact Sheet: "US Assurance and Deterrence Efforts to Support US NATO Allies." Available at https://www.whitehouse.gov/the-press-office/2016/07/08/fact-sheet-us-assurance-and-deterrence-efforts-support-nato-allies.

With the exception of the valuable and expanded BALTOPS exercise (which in 2016 greatly expanded with amphibious operations), very little of the effort expended to deter Russian activity has had a robust naval element.[94] Anti-submarine warfare may be a place to begin examining NATO's readiness levels. One NATO center did assess the Alliance's capability and concluded:

> NATO has a history of misreading Russian intent and being ill prepared for Russian military activity. A pervasive feeling amongst many maritime strategists and naval planners is that submarines are a relic of the Cold War. Subsequently, anti-submarine force development has not received the proper prioritization in many national procurement programs.[95]

In addition to NATO's collective efforts, a number of states in the region have adopted reserve/militia forces to improve their own capacity to resist Russian incursions. For example, the Polish government plans to establish a Territorial Defense Force explicitly to deter Russian "hybrid warfare."[96] Other countries are following suit, or others, like Sweden, are reconsidering the need for conscription to build up their forces.[97]

The notion of a second Cold War may be an exaggeration, but it does not take any imagination to see that the Russian Bear is not hibernating any longer. NATO cannot afford to function with a future capability shortfall against a growing submarine presence. While the immediate need to reassure allies in conventional terms is quite understandable, it is time to devote serious attention to Russia's more unconventional approaches, particularly in the region's maritime domain.[98] Russia and other aggressors can employ hybrid methods at sea as well, as the Iranians have demonstrably shown.[99] The remainder of this research effort is devoted to examining and better preparing NATO for future incursions of its security.[100]

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[94] In addition to the RAND exercise previously cited, see, "Poland-U.S. Crisis Planning Seminar and Strategic Choices Exercise," (Washington, D.C.: Center for Strategic and Budgetary Assessment, July, 2016). Briefing slides available at http://csbaonline.org/uploads/documents/POL-US-Strategic-Choices-Seminar_2.pdf.

[95] Joint Air Power Competence Centre, *Alliance Airborne Anti-Submarine Warfare, A Forecast for Maritime Air ASW in the Future Operational Environment* (Kalkar, Germany, June 2016), p. 2.

[96] Bjorn Muller, "The Territorial Defense Force – Poland's militia for anti-hybrid warfare," Swiss Officer March 4, 2017. Available at http://www.offiziere.ch/?p=30704.

[97] Paul Goble, "Lithuanian Popular Militia Expands to Defend Against Russian Threat," *Eurasia Daily Monitor*, Jamestown Foundation, March 2017; and "Sweden brings back military conscription amid Baltic tensions," BBC News, March 2, 2017. Available at http://www.bbc.com/news/world-europe-39140100.

[98] Paul Symanski, "The Baltic states' Territorial Defense Forces in the Face of Hybrid Threats." The Center for Eastern Studies (March 20, 2015), pp. 1–8. Available at http://www.osw.waw.pl/en/publikacje/osw-commentary/2015-03-20/baltic-states-territorial-defence-forces-face-hybrid-threats.

[99] F. G. Hoffman, "Hybrid Threats, Neither Omnipotent nor Unbeatable," *Orbis,* vol. 54, no. 3 (Summer 2010), pp. 441–455.

[100] Jeffrey A. Larsen, "Time to Face Reality, Priorities for NATO's 2016 Warsaw Summit," (Rome: NATO Defense College, *Research Paper No. 126*, January 2016).

Enhancing Baltic Regional Maritime Security

Facing up to the myriad threats facing the Alliance requires a holistic strategy including maritime capabilities.[101] Up to this point, initiatives like "Smart Defense," which encourage Allies to cooperate in developing and acquiring military capabilities, lacked a substantial maritime dimension.[102] Senior NATO officials publically note that the Alliance needs to improve its deterrence posture and improve the territorial defense of member states.[103] However, the character of the Russian challenge to this region is not limited to conventional ground capabilities. As noted by another study and confirmed by senior officers in the region, "NATO and partner nations do not currently possess the ability to quickly counter the Russian undersea challenge in much of the North Atlantic and Baltic Sea."[104] The Alliance and its partners in the region must place a high priority on addressing the larger maritime challenge. Given the vulnerabilities that the region faces, NATO should create a Regional Maritime Security Strategy in order to close the capability gaps and capacity shortfalls. The existing NATO maritime strategy was established in 2011 prior to the more provocative actions of the Russian Federation and before other strategic changes occurred (e.g., energy diversity and security).[105] It contains the basic framework of a coherent strategy, but NATO must update and expand it.[106] In particular, the strategy notes that "global trade relies upon secure and low-cost international maritime transportation and distribution networks that are vulnerable to disruption, to the extent that even short interruptions would seriously impact international trade and Allies' economies." The strategy goes on to note that "the maintenance of the freedom of navigation, sea-based trade routes, critical infrastructure, energy flows, protection of marine resources and environmental safety are all in Allies' security interests."[107] Yet, the strategy does not advance detailed ways to better secure these interests. More recently, Poland's strategic concept for maritime security has numerous elements worthy of review and incorporation.[108]

The Pentagon developed a comprehensive maritime strategy in response to ongoing challenges in the Asia-Pacific region, which establishes several lines of effort unique to that area.[109] It needs to do so for the northern and eastern flanks of Europe as well. A strategic emphasis on major power competition naturally tends toward protecting key chokepoints like the GIUK gap and access to allies via the North Sea. However, a NATO or U.S. regional maritime

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[101] Ine Eriksen Soreide, "NATO and the North Atlantic: Revitalizing Collective Defense and the Maritime Domain," *PRISM,* vol. 6, no. 2 (2016), pp. 49–57; and Anna Wieslander, *NATO, the U.S. and Baltic Sea Security*, (Stockholm: Swedish Institute of International Affairs, *Ulpaper No. 3*, 2016).

[102] Smart Defense is a concept that encourages Allies to cooperate in developing, acquiring and maintaining military capabilities to meet current security problems in accordance with the new NATO strategic concept. Therefore, NATO Smart Defense means pooling and sharing capabilities, setting priorities, and coordinating efforts better. See, NATO's description at http://www.nato.int/docu/review/topics/en/smart-defence.htm; and Nordenman, *The Naval Alliance*, p. 2.

[103] Philip M. Breedlove, "NATO's Next Act: How to Handle Russia and Other Threats," *Foreign Affairs*, (July/August 2016), p. 100.

[104] Interview with senior Danish official; and Kathleen H. Hicks, Andrew Metrick, Lisa Sawyer Samp, and Kathleen Weinberger, *Undersea Warfare in Northern Europe* (Washington, D.C.: Center for Strategic and International Studies, July 2016), p. ii.

[105] Steven Horrell, Magnus Nordenman, and Walter B. Slocombe, "Updating NATO's Maritime Strategy," (Washington, D.C.: Atlantic Council, July 2016).

[106] *NATO Maritime Strategy*, NATO Headquarters, Brussels, July 2011. Available at http://www.nato.int/cps/en/natohq/official_texts_75615.htm.

[107] *NATO Maritime Strategy*, p. 2.

[108] Andrzej Duda, *Poland's Strategic Concept for Maritime Security*, (Warsaw, 2017). (English translation)

[109] Department of Defense, *Asia-Pacific Maritime Security Strategy*, *Achieving U.S. National Security Objectives in a Changing Environment*, (Washington, D.C.: Office of the Secretary of Defense, 2015).

strategy should address the hybrid character and the challenges of irregular methods in the maritime domain.[110] More attention should be devoted to the congested and constrained environment inside the Baltic Sea. The particular needs of the Baltic Sea Region have significant relevance to any truly comprehensive maritime strategy.[111]

The details of such a strategy are beyond the scope of this study, but the six major pillars of this strategy would be:

- ◉ Enhanced Maritime Domain Understanding

- ◉ Distributed Deterrence

- ◉ Critical Infrastructure and Port Security

- ◉ Cooperative or Federated Planning

- ◉ Undersea Warfare Assets

- ◉ Expanded Alliance Regional Security Architecture and Coordination

Enhanced Maritime Domain Understanding. The complex nature of the region's congested and shallow waters, and high-volume of maritime transportation, makes enhanced maritime domain awareness both necessary and challenging. Maritime domain awareness cannot be limited to purely military traffic and military concerns given the possible application of hybrid warfare against softer targets. Moreover, NATO must secure data links from penetration and compromise in emergency. However, the character of such threats requires interoperability not just within the military sector and must include law enforcement, border security, and the private sector. While much is done, more can be accomplished, particularly the ability to fuse information from various sources and assess irregular threats from unexpected sources.

Implementing "*Distributed Deterrence.*" NATO has done an excellent job of increasing deterrence in the landward side of the region by implementing forward rotational presence of ground forces. Such "tripwire forces" raise the political costs of any ground blitz from Russia across a land frontier. Naval deterrence measures include the annual BALTOPS exercise, which augments NATO's deterrent posture, particularly with recent efforts to incorporate greater emphasis on anti-submarine warfare and amphibious operations. Western officials understand the importance of BALTOPS, and are signaling a greater degree of readiness and interoperability to deter potential aggression.[112] These capabilities will contribute materially to enhanced conventional deterrence.[113]

Further efforts will be needed in the maritime domain. One possible move would be to adapt the U.S. Navy's "Distributed Lethality" concept to increase the firepower and flexibility of maritime assets in the Baltics.[114] The presence of a U.S. naval vessel in the region, perhaps a Littoral Combat Ship, would be a positive move. But Distributed Deterrence, as used in this research paper, implies an even larger concept of distributed firepower, using naval and shore-based

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[110] Molly Dunigan, Dick Hoffmann, Peter Chalk, Brian Nichiporuk, and Paul Deluca, *Characterizing and Exploring the Implications of Maritime Irregular Warfare* (Santa Monica, CA: RAND, 2012); and Peter Chalk, *The Maritime Dimensions of International Security: Terrorism, Piracy, and the Challenges for the United States* (Santa Monica, CA: RAND, 2008).

[111] Stefan Lundqvist and J. J. Widen, "The New US Maritime Strategy: Implications for the Baltic Sea Region," vol. 160, no. 6, *RUSI Journal*, December 2015, pp. 42–48.

[112] VADM James Foggo and Adam Cole, "Not your Father's BALTOPS," *Naval Institute Proceedings,* February 2016, p. 28.

[113] On details about the 2016 exercise, see, http://www.c6f.navy.mil/forces-efforts/baltops-2016.

[114] Vice Admiral Thomas Rowden, Rear Admiral Pete Gumataotao, and Rear Admiral Peter Fanta, "Distributed Lethality," *Naval Institute Proceedings*, January 2015.

anti-ship cruise missile capabilities to maximize coverage of the littorals along the Baltic Sea. The concept could include low-cost options to exploit commercial assets and regional coast guard resources with relatively inexpensive anti-ship missile capabilities. As noted by the U.S. strategist Jim Thomas, this concept would involve investing in anti-access capabilities designed "to buy time by increasing costs to the assaulting army and by denying it the benefit of a quick fait accompli."[115] Cross domain options to enhance maritime security and open flanks may also be presented. Additionally, NATO can incorporate sea-based theater missile defense and advanced surface-to-air missile capabilities as part of the improved deterrent posture of regional navies. Negating the exclave of Kaliningrad from interfering with NATO's freedom of maneuver in the region is important to regaining deterrence.[116] Without the capacity for NATO to introduce reinforcements into the region, Russia might seize a window of opportunity with a *fait accompli*.

These actions will increase the ability of NATO to deter by punishment. Another approach would be to increase deterrence by denial by enhancing the individual capacity of states to resist political interference, disinformation, and corruption. At the Warsaw Summit in July 2016, the NATO's Heads of State and Government stated a commitment

> to enhance resilience, i.e. to maintain and further develop the Alliance members individual and collective capacity to resist any form of armed attack. In this context, we are today making a commitment to continue to enhance our resilience against the full spectrum of threats, including hybrid threats, from any direction. Resilience is an essential basis for credible deterrence and defence and effective fulfilment of the Alliance's core tasks.[117]

Enhancing resilience is increasingly recognized as an element of security against political and informational subversion.[118] Promoting a larger concept of Distributed Deterrence that is distributed to the maritime/commercial sectors could increase resilience. By enhancing the security of these key elements of maritime security, and thus denying their vulnerabilities as easy targets for hybrid threats, the overall security of the region will improve. The region should seek to buttress its resilience in commercial security and information system redundancy. By taking these measures, some of which are detailed in the next section, the region would gain deterrence against hybrid threats to its interests, not just conventional deterrence against traditional fighting ships.[119]

Enhance Critical Infrastructure and Port Security. There are also other improved low-cost and unmanned options for undersea detection and attack mechanisms to deter undersea intrusions and neutralize them. These would materially improve security at ports and critical infrastructure in the region.[120] Hybrid threats will challenge these soft spots in both direct attacks from non-military sources or non-attributable incidents and indirect "accidents." As noted in a recent study, organizational arrangements to ensure regional maritime security should include non-NATO member countries.[121]

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[115] Jim Thomas, "Why the Army Needs Missiles," *Foreign Affairs*, May/June 2013.

[116] Luis Simon, "The Third US Offset Strategy and Europe's Anti-Access Challenge," *Journal of Strategic Studies,* vol. 39, no. 3, 2016, pp. 417–445.

[117] NATO Summit Guide, Warsaw, July 8-9, 2016. Available at http://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_07/20160715_1607-Warsaw-Summit-Guide_2016_ENG.pdf.

[118] Hans Binnendijk and Dan Hamilton, eds., *Opening the Aperture on Resilience*, (Washington, D.C.; Center for Transatlantic Relations, 2017).

[119] I am indebted to two fellow INSS scholars for this construct, Chuck Barry and Julien Lindley-French, from their contribution on Europe and NATO in *Charting a Course*, p. 213.

[120] Stefan Nitschke, "Naval Technology under the Lens," *Naval Forces*, vol. 37, no. 4, 2016, pp. 58–60.

[121] Schaub, Murphy, and Hoffman, "Hybrid Maritime Warfare: Building Baltic Resilience," pp. 36–40.

In the Baltic Sea Region, NATO should consider creating a Standing Maritime Security Group. This grouping would include more than NATO forces and might consist of a combination of military and law enforcement assets including port security resources, maritime and coastal surveillance assets, maritime law enforcement, and special operations units. But more than a NATO group is needed, and the Standing Maritime Security Group would be a step towards a larger consortium of public safety and security resources.

Greater Collaborative Capability Development by Members.[122] The confluence of increased security challenges and constrained resources mandates greater consideration for smart defense planning and greater use of pooled resources or what some scholars call a federated approach.[123] NATO already uses this approach to a degree in some areas including maritime patrol aircraft.[124] Much more can and should be done with respect to other forms of domain awareness including long-loiter undersea surveillance capabilities, and, perhaps, in mine countermeasures. The undersea dimension, which is far more than just countering submarines, deserves greater attention and more investment.

The value of a collaborative force development approach in the region is recognized by some strategists, at least for anti-submarine warfare or undersea warfare challenges.[125] NATO efforts to narrow gaps in capabilities, such as the development of relevant concepts including the NATO Concept for Countering-Hybrid Threats, show promise. The latter needs to incorporate more attention on the maritime dimension of the problem.[126]

Another potential area for expanded capability is in Special Operations Forces. The quality of Allied and partner special operation units is excellent. Capacity and equipment upgrades will be needed to offset certain Russian hybrid activities. Special Operations Forces are excellent students of unconventional methods and are well-grounded in exploiting non-military factors in conflict. NATO and U.S. doctrine should extend the conceptual boundaries of Foreign Internal Defence against hybrid and unconventional methods.[127] The special operations community can be a viable base for interface with the law enforcement community as well as for providing the planning staff for counter-hybrid strategies and operations. Their expertise in understanding the special operations of the region and their cultural/social/language skills are invaluable. The input of special operations experts into a larger strategic information campaign should not be overlooked, but other sources of public diplomacy expertise and social media savvy are needed more.[128]

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[122] For further insights, see, Steven Horrell, Magnus Nordenman, and Walter B. Slocombe, "Updating NATO's Maritime Strategy," (Washington, D.C.: Atlantic Council, *Issue Brief,* July 2016).

[123] Michael Green, Kathleen Hicks, and Zach Cooper, *Federated Defense in Asia* (Washington, D.C.: Center for Strategic and International Studies, December 2014); Johan Raeder, "Enhanced Defense Cooperation," *Issue Brief* (Washington, D.C.: Atlantic Council, February 2016); and Andrew Shearer, *Australia-Japan-U.S. Maritime Cooperation, Creating Federated Capabilities for the Asia Pacific Region* (Washington, D.C.: Center for Strategic and International Studies, April 2016).

[124] Magnus Nordenman, "NATO's Next Consortium: Maritime Patrol Aircraft," (Washington, D.C.: Atlantic Council*, Issue Brief*, May 2016).

[125] Hicks et al, *Undersea Warfare in Northern Europe*, pp. 32–44.

[126] European Commission, "Joint Communication to the European Parliament and the Council, Joint Framework on Countering Hybrid Threats, a European Union Response," (Brussels: EU, April 6, 2016).

[127] Charles T. Cleveland, "Special Operations Doctrine, Is it Needed?" *Prism*, vol. 6, No. 3, 2017, pp. 5-19.

[128] See, the Congressional testimony of Michael D. Lumpkin before the Emerging Threats Subcommittee, House Armed Services Committee, 115th Congress, March 15, 2017. Available at http://docs.house.gov/meetings/AS/AS26/20170315/105689/HHRG-115-AS26-Wstate-LumpkinM-20170315.pdf.

Strengthen the Readiness and Capacity of NATO's Undersea Warfare Assets. Undersea operations will be the next frontier in naval warfare.[129] As noted by one U.S. analyst,

> With computer processing power continuing to rapidly increase and become more portable, dramatic breakthroughs are imminent in undersea sensing, communications, and networking. Advancements are also underway in power generation and storage that could yield significant increases in the endurance, speed, and capability of unmanned vehicles and systems. These improvements would compel a comprehensive reevaluation of long-held assumptions about the operational and tactical employment of undersea capabilities, as well as the future design of undersea systems.[130]

NATO needs to revitalize its anti-submarine warfare capabilities and do more than merely coordinate.[131] The Unmanned Underwater Vehicle could augment the existing anti-submarine vessels in the region quite well. NATO should ensure the region's navies and coast guards can deploy sufficient underwater systems that can patrol and surveil the shallow/constrained waters of the region under adverse weather conditions.[132] As part of an aggressive innovation program, the U.S. Navy is expanding its unmanned undersea capabilities.[133] It is also exploring unmanned surface "sub hunters."[134] Programs like the Anti-Submarine Warfare Continuous Trail Unmanned Vessel (ACTUV) capability should be monitored for application.[135] Next, individual countries and regional groups should invest in improved undersea surveillance and monitoring capacity from long-loiter, nonlethal, and unmanned systems that operate undersea instead of at the surface. NATO should leverage the kind of collaboration shown during *Joint Warrior/Unmanned Warrior 2016* as much as possible.[136] NATO could benefit from these investments given the emerging unmanned/robotic revolution and its application to the undersea challenge in the Baltic Sea Region.

Expanded Alliance Regional Security Architecture and Coordination. The unconventional and economic aspects of hybrid threats like Russia go beyond traditional security and mandate that NATO interact with the EU and regional entities to enhance collective security in a broader sense, including the private commercial sector. Economic stability and commercial resilience are important elements of the region's prosperity and serve as an effective defense against non-traditional threats.[137] A full spectrum challenge like Russia requires a more comprehensive approach and the elimination of institutional seams and organizational habits or preferences. Hybrid threats target these seams.

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[129] See, Bryan Clark, *The Emerging Era in Undersea Warfare* (Washington, D.C.: Center for Strategic and Budgetary Assessment, January 2015), pp. 8–16; and Christian Davenport, "The New Frontier for Drone Warfare: Under the Oceans," *The Washington Post*, November 25, 2016, p. A16.

[130] Clark, p. 16.

[131] Rear Admiral Lars Saunes, Royal Norwegian Navy, "The Commanders Respond," *Naval Institute Proceedings*, vol. 143, No. 3, March 2017, p. 29.

[132] Hicks et al, *Undersea Warfare in Northern Europe,* p. 5.

[133] Robert Sparrow and George Lucas, "When Robots Rule the Waves," *Naval War College Review*, vol. 69, no. 4, Autumn 2016, pp. 52–55; Joshua Edwards and Dennis M. Gallagher, "Mine and Undersea Warfare for the Future*," Naval Institute Proceedings,* August 2014, pp. 70–75; and R. Scott, "ONR to Swim Ahead on ASW Package for Large UUV," *IHS Jane's Navy International*, November 20, 2014.

[134] Kelsey Atherton, "Today DARPA Christens Its Robotic Submarine Hunting Ship," *Popular Science*, April 7, 2016. Available at http://www.popsci.com/today-darpa-christens-their-robotic-submarine-hunting-ship.

[135] Scott Littlefield, "Anti-submarine Warfare (ASW) Continuous Train Unmanned Vessel (ACTUV)," (Arlington VA: DARPA). Available at http://www.darpa.mil/program/anti-submarine-warfare-continuous-trail-unmanned-vessel.

[136] Megan Eckstein, "Unmanned Warrior 2016 Puts Technologies into Warfighter's Hands," *USNI News,* October 18, 2016. Available at https://news.usni.org/2016/10/18/unmanned-warrior-2016-exercise-u-k-puts-emerging-technology-warfighters-hands.

[137] Peter Pindják, "Deterring Hybrid Warfare: A Chance for NATO and the EU to Work Together," *NATO Review*, 2014. Available at http://www.nato.int/docu/review/2014/also-in-2014/Deterring-hybrid-warfare/EN/index.htm.

As this paper has noted, increased cooperation between the NATO alliance and Sweden and Finland has materially improved mutual planning, logistics, and interoperability. Stronger links between NATO and the Nordic Defence Cooperation effort are now established and could be leveraged to enhance both capacity and interoperability.[138] Both groups should sustain and expand their efforts to support interoperability and collaborative development. The United States has entered into formal agreements with partner states to extend mutual cooperation on key capabilities and training.[139] Prospects for more formal integration, including NATO expansion, are not likely.

Security challenges in this region are not limited to traditional surface or aviation threats. The dense networks of commercial shipping, energy transportation nodes, and undersea infrastructure require protection. Port security, fishing resources, bridges, underwater cables, and other elements of the economic ecosystem of the Baltic Sea are potentially vulnerable targets and must be better secured.

Recommendations

With the preceding assessment in mind, this report offers several recommendations to enhance the security of the maritime domain the Baltic Sea Region.

Develop a Regional Maritime Strategy. NATO requires an updated Maritime Strategy that outlines its approach towards closing capability gaps and maritime security shortfalls.[140]

A regional version, addressing both the North Atlantic and Baltic Sea issues, would provide more focus and greater granularity on the unique challenges of the region. "Enough has changed with the Russia threat, with migration issues, with the rise of information systems that it may be time to take another look at the NATO maritime strategy to see if it adequately describes the problem set that we have got," U.S. Chief of Naval Operations Admiral John Richardson has stated.[141] That effort should explore the region as a whole including the North Atlantic as well as the Baltic Sea. [142] Such a strategy should seek to incorporate the full nature of challenges that face the members from a maritime security perspective, not just naval forces. NATO is encouraged to work with the EU and approach critical stakeholders like the private sector/commercial institutions.

Increase Capability and Capacity via a Maritime Security Enhancement Initiative. NATO's leadership should quickly assess its collective maritime capabilities and devise a Maritime Security Enhancement Initiative that defines its ambitions and outlines desired progress in closing capacity gaps. Ground force enhancements are necessary, but not sufficient.[143]

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[138] For more on Nordic Defense Cooperation, see, http://www.nordefco.org/the-basics-about-nordefco.

[139] Jari Tanner, "Finland, US to deepen military ties through pact," *U.S. News and World Report*, October 7, 2016. Available at http://www.usnews.com/news/world/articles/2016-10-07/finland-us-to-deepen-military-ties-through-pact; U.S. Defense Department release at http://www.defense.gov/News/News-Releases/News-Release-View/Article/968234/readout-of-deputy-secretary-of-defense-bob-works-meetings-in-helsinki-finland; and *Statement of Intent between the Secretary of Defense of the United States of America and the Minister of Defence of Sweden*, June 8, 2016. Available at http://www.government.se/49d2af/globalassets/government/dokument/forsvarsdepartementet/statement-of-intent-swe_us-20160608_signed.pdf.

[140] Nordenman, "Updating NATO's Maritime Strategy," pp. 12–13; and Nordenman, "From Submarines to Smuggler Skiffs," p. 59.

[141] Julian Barnes, "Top U.S. Admiral Says NATO Should Rework Maritime Strategy," *Wall Street Journal,* October 22, 2015. Available at http://blogs.wsj.com/brussels/2015/10/22/top-u-s-admiral-says-nato-should-rework-maritime-strategy/.

[142] Magnus Nordenman, "Back to the Gap: The Re-emerging Maritime Contest in the North Atlantic," *RUSI Journal*, vol. 162, Issue 1, 2017, pp. 24–30.

[143] Julian E. Barnes and Anton Troianovski, "NATO Allies Preparing to Put Four Battalions at Eastern Border With Russia," *Wall Street Journal*, April 29, 2016. Available at http://www.wsj.com/articles/nato-allies-preparing-to-put-four-battalions-at-eastern-border-with-russia-1461943315.

NATO should examine its priorities for resources from the European Reassurance Initiative and allocate resources to support identified maritime gaps with funding. That funding should represent at least 20 percent of the initiative's resources. However, most capacity increases would come from member state resources and defense spending.

Organizational Initiatives. The EU has established a center for excellence to counter hybrid threats, and NATO should support it.[144] But to further collaborative force development capabilities, NATO should create a new Center of Excellence for Undersea Warfare.[145] The center would serve as the focal point for collaborative development of Unmanned Underwater Vehicles for Undersea Warfare. A Standing Maritime Undersea Warfare force under NATO's Maritime Command is also worthy of investment.[146] Given that hybrid threats pose problems that extend well past NATO's expertise, a Baltic Sea Regional Maritime Security Group with civilian and law enforcement contributions may be necessary.

Conclusion

As one academic observed, "hybrid warfare is coming to a theater of war near you," whether we are ready or not.[147] In his projection about future conflict, Christopher Coker predicted that the Baltic Sea area was the most likely "theater." A lack of awareness and inadequate force posture is one reason why the probability of a hybrid or conventional conflict is growing. As noted by former American policy official, Ambassador Eric Edelman, "the imbalance of forces is even more pronounced in the Baltic Sea, where NATO only maintains a sporadic maritime presence."[148] This region remains one place where the confluence of U.S. security interests and Russia's come into direct contact.

Russia presents a full spectrum warfare capability, across all domains, not just conventionally against NATO's land borders.[149] Moscow has taken violent actions in the Ukraine, Crimea, and Syria, and the West should not lose sight of NATO's eastern flank and its vulnerable maritime dimensions. As the U.S. Chief of Naval Operations has noted, rising powers are increasingly contesting both international norms and the maritime domain.[150] Sustaining those norms will contribute substantially to peace and prosperity for all.

Deterrence of Russian actions against the Baltics requires that NATO change the calculus of Russian leaders by diminishing the likelihood of success in restricting NATO's freedom of maneuver into the region and increasing their

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[144] "EU plans center to combat hybrid warfare in Finland," *USNews.com*, November 21, 2016. Available at https://www.usnews.com/news/technology/articles/2016-11-21/eu-plans-center-to-combat-hybrid-warfare-in-finland.

[145] NATO has 24 accredited COEs and just three are naval (COE for Combined Joint Operations from the Sea, Naval Mine Warfare, and Operations in Confined and Shallow Waters). The latter center is located in Kiel, Germany. For a description of all of NATO's centers, visit http://www.nato.int/cps/en/natohq/topics_68372.htm.

[146] Hicks, et al, p. ii.

[147] Christopher Coker, "NATO and Baltic Security," in Ann-Sofie Dahl, ed., *Baltic Sea Security* (Copenhagen: Centre for Military Studies, University of Copenhagen, 2015), p. 11.

[148] Eric S. Edelman and Whitney Morgan McNamara, *U.S. Strategy for Maintaining A Europe Whole and Free* (Washington, D.C.: Center for Strategic and Budgetary Assessments), p. 29.

[149] Oscar Jonsson and Robert Seely, "Russian Full-Spectrum Conflict: An Appraisal after Ukraine," *Journal of Slavic Military Studies*, vol. 28, no. 1, 2015, pp. 1–22.

[150] Admiral John M. Richardson. "The Growing Importance of the Maritime,"10th Regional Seapower Symposium, Venice, Italy, October 22, 2015\. Available at .http://www.navy.mil/navydata/people/cno/Richardson/Speech/CNO_RSSPanelSpeech_22OCT2015.pdf.

perception of the costs and consequences involved. U.S. policy has properly identified the requirement to reassure NATO and enhance conventional deterrence. The Alliance's posture in the region against conventional and direct attack is now materially enhanced. NATO is planning to bolster its eastern flank with a more credible force and to improve the deployment posture of the Alliance in the region. These actions are necessary, but not sufficient to offset Russia's unconventional methods in the maritime domain.

Today, the Alliance is stronger than it was in 2014 in so many respects. Its cohesion and capabilities were strengthened in reaction to Russia's action. But it remains conceptually and organizationally underprepared for maritime versions of hybrid conflict. NATO lacks the tactics and supporting capabilities to defend this critical region against a persistent but indirect form of conflict.[151] The West must do more to address Russia's hybrid activities and the threat they pose to Europe in general and the Baltic Sea Region in particular. The growing challenge posed by Russian hybrid tactics is real and not going away anytime soon.[152]

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[151] Stavridis, "Hybrid Maritime Warfare is Coming," p. 33.

[152] For insights on countering these tactics, see, Christopher S. Chivis, "Understanding Russian Hybrid Warfare, And What Can Be Done About it," testimony before the House Armed Services Committee, March 22, 2017.

Acknowledgements