

Julian Pawlak | Johannes Peters [eds.]

From the North Atlantic to the South China Sea

Allied Maritime Strategy in the 21st Century



Nomos

<https://doi.org/10.5771/9783748921011>, am 16.08.2024, 14:26:51
Open Access –  – <https://www.nomos-elibrary.de/agb>



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edited by

The Institute for Security Policy at Kiel University (ISPK)

Volume 4

Julian Pawlak | Johannes Peters [eds.]

From the North Atlantic to the South China Sea

Allied Maritime Strategy in the 21st Century

With an introduction by Sebastian Bruns



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Supported by the Konrad-Adenauer-Stiftung (KAS).



The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at <http://dnb.d-nb.de>

ISBN 978-3-8487-7708-2 (Print)
978-3-7489-2101-1 (ePDF)

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

ISBN 978-3-8487-7708-2 (Print)
978-3-7489-2101-1 (ePDF)

Library of Congress Cataloging-in-Publication Data

Pawlak, Julian / Peters, Johannes
From the North Atlantic to the South China Sea
Allied Maritime Strategy in the 21st Century
Julian Pawlak / Johannes Peters (eds.)
372 pp.
Includes bibliographic references.

ISBN 978-3-8487-7708-2 (Print)
978-3-7489-2101-1 (ePDF)

1st Edition 2021

© Julian Pawlak / Johannes Peters (eds.)

Published by
Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden
www.nomos.de

Production of the printed version:
Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden

ISBN 978-3-8487-7708-2 (Print)
ISBN 978-3-7489-2101-1 (ePDF)
DOI <https://doi.org/10.5771/9783748921011>



Onlineversion
Nomos eLibrary



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Preface

The maritime domain remains a central pillar of contemporary military strategy. Even as defence policy and warfighting has ventured into new operational areas, such as space or cyberspace, warfare at sea continues to be a key area of 21st century military strategic thought. While the naval domain has been a concern for military strategists for centuries, one might contend that it has never been as important as in today's hyper-connected, globalised world.

The world's seas are essential to the freedom, safety and prosperity of our societies. The vast majority of global trade is conducted via international shipping lanes, many of them running through vulnerable choke points and bottlenecks. Marine resources such as fishing grounds or natural gas and oil deposits below the sea are still the bedrock of many economic sectors. Most of the world's population lives within 100 kilometres of the coast. Societies and economies are also more interconnected than ever through trans-oceanic infrastructure, such as submarine communication cables or pipelines on the seabed. Even small disruptions to global shipping or the failure of a few elements of global maritime infrastructure can have serious ripple effects that are felt worldwide. Thus, allies in Europe and North America must have paramount interest in preserving the peace, stability and freedom of global waters.

At the same time, the maritime security environment has become more complex and faces major challenges. Geopolitical competition—even rivalry—in the maritime domain has become a major threat to peace, stability and freedom. Heightened tensions with Russia after 2014 and increasing friction between the United States and China are being played out in the maritime field. An illustrative example, of course, is the South China Sea, where Beijing's territorial claims clash with Washington's intention to defend the current rules-based order and assert freedom of navigation. But there are also more indirect threats to the security of international waterways. State fragility and sub-state conflicts in coastal states or in the vicinity of important straits have externalities, such as attacks on international shipping by pirates, criminal groups or terrorists.

In addition, climate change is increasingly intensifying the threat of all the aforementioned challenges. It opens up geo-strategic competition in new theatres, such as the Arctic, where melting ice caps have increased accessibility and brought with it a potential strategic race between China,

Russia and the US. Global warming is also adding to the fragility of vulnerable societies and to the kind of protracted conflicts that spill over into the maritime domain. Furthermore, the destruction of livelihoods through climate change will become one of the top push-factors forcing people to migrate—which is often exploited by human traffickers operating via international waters. This all demonstrates why preserving maritime security must be a chief concern for Germany and its partners in the EU and NATO.

Yet, the maritime strategies that underpin both organisations, NATO's Alliance Maritime Strategy and the EU Maritime Security Strategy, still stem from 2011 and 2014 respectively. They do not adequately reflect the realities of the fundamentally altered security environment of the 2020s and 2030s. In particular, 2014 marked a strategic watershed moment, bringing territorial defence back to the forefront of debate. Effectively defending the Euro-Atlantic area, however, will hardly be possible without taking the maritime dimension into proper consideration. The requirements for European, Canadian and American navies have drastically changed. While we have grown accustomed over decades to engaging in low-intensity operations fulfilling stabilisation or policing missions, Western naval forces will have to return to their traditional roles. Once again, they need to be able to conduct naval warfighting in contested environments and engage at the high-intensity end of the spectrum. Still, allied navies will not be able to entirely shed their former roles. Conflicts and instability on the southern and eastern shores of the Mediterranean and at the Horn of Africa will require us to deal with the continued need for naval stabilisation missions.

Both, the EU and NATO maritime strategies also do not take into account the full extent of Washington's pivot to Asia and its shifting focus towards the Indo-Pacific. The fact that the only global maritime power is turning its attention towards China carries far-reaching implications for its other allies. On the one hand, it comes with an expectation that Canada and Europe will pick up some of the slack—including in the maritime domain. The US will ask Europe to shoulder more of the burden of counterbalancing Russia and its aggressive foreign policy at sea. On the other hand, Washington will initiate a debate on how its Euro-Atlantic allies can complement American efforts in the Indo-Pacific—either through force projection in the form of naval deployment or through more indirect support for the intensifying American military stand-off at sea with China.

Allied maritime strategies will need to consider the altered circumstances of today's global security environment. A first step would be to formulate a strategic level of ambition for the EU and NATO. What is it that

we hope to achieve in the maritime domain in the future? How do we prioritise tasks and what could constitute suitable division of labour between the European Union and the Transatlantic Alliance? Policymakers will then need to translate these strategic ambitions into appropriate requirements for the equipment, training and organisation of naval forces. This entails empowering the defence industry to remain at the innovation frontier of naval technology. And it will require further harmonisation of national navies across the EU and NATO in order to generate cross-linked, multinational and interoperable naval units.

To this end, this book takes an in-depth look at key tenets of current allied maritime strategy, conducts a strategic and operational assessment of the current threat level and sketches the responses required to deal with these challenges effectively. While not an exhaustive assessment, it is an important look at what allied maritime strategy in the 21st century needs to consider. The Konrad-Adenauer-Stiftung is honoured to be able to support such an important endeavour in maritime strategic thought. We hope scholars and practitioners alike will find this book an informative and thought-provoking read.

Nils Wörmer and Philipp Dienstbier
Konrad-Adenauer-Stiftung



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Section 1: Fundamentals

Together... From the Sea: Contemporary Allied Maritime Strategy¹

Sebastian Bruns

“Take the long way home”²

Even for the most optimistic observers, the long era of the post-Cold War “peace dividend” is ending. For maritime analysts, it is clear that warships and aircraft are increasingly being tasked with missions pertaining to their original *raison d’être*—i.e. the ability to deter armed conflict and wage war at sea and from the sea. This process comes after an era that was characterised by the rise of low-intensity activities: counter-piracy, counterterrorism, embargo control and maritime security operations.³ For the US Navy as well as many European forces alike, these pre-2014 roles and missions were overwhelmingly performed by legacy Cold War units, stand-off weapons and a mindset that emphasised flexibility, scalability and mobility.⁴

-
- 1 In this chapter, I define allied maritime strategy in a comprehensive manner as the set of naval ways, ends and means of the world’s three most important political alliances: The North Atlantic Treaty Organization (NATO), the European Union (EU) and the United Nations (UN). It is therefore not to be confused with NATO’s own, capitalised “Alliance Maritime Strategy” from 2011. Whereas NATO is a system of collective defence, the EU is a unique system of political and economic integration. The United Nations, a body of collective security, custodian of the Convention of the Law of the Sea and provider of one Security Council mandate with a maritime task force—United Nations Interim Force in Lebanon, or UNIFIL—does not have a dedicated maritime security strategy and will not be considered here. I wish to thank Dr John D. Sherwood for critical comments on an earlier version of this paper.
 - 2 Supertramp, 1979. Written by Roger Hodgson, produced by Supertramp and Peter Henderson.
 - 3 These missions did not mysteriously appear after the 1989/1991 transition. A lot of naval forces dealt with these kinds of challenges even in the context of the Cold War, including the Soviet and American navies and their allies. See James Cable, *Navies in Violent Peace*. Palgrave MacMillan: Houndmills and London 1989.
 - 4 On the US Navy, see Sebastian Bruns, *US Naval Strategy and National Security. The Evolution of American Maritime Power*. Routledge: London 2018. On European navies, see Jeremy Stöhs, *The Evolution of European Naval Power. Strategy, Force Structure, Operations*. Dissertation: University of Kiel 2019.

In the absence of a sea control challenger, navies and their political masters focused on low- and medium-intensity operations. Recalling the words of Samuel Huntington in his landmark 1954 essay, I contend that navies can conduct such operations but that is hardly what they are built and maintained for.

“A military service may at times [...] perform functions unrelated to external security, such as internal policing, disaster relief, and citizenship training. These are, however, subordinate and collateral responsibilities. A military service does not exist to perform these functions; rather it performs these functions because it has already been called into existence to meet some threat to the national security.”⁵

In parallel, from the 1990s onwards, Western military forces underwent significant changes. Many planners lauded, and subsequently often abandoned again, the promises of air power, small and agile forces, or battlefield dominance through high technology, which many armed conflicts of the 21st century with their reliance on handguns and old tactics debunked. Naval presence and diplomacy fit well into the mindset of many decision makers in member states’ capitals. Consequently, naval constabulary and diplomatic roles overshadowed more established defence and deterrence roles.⁶ Not having to commit boots on the ground in crises often served domestic political objectives, and safeguarding the rapidly expanding maritime global commons—“90% of everything”⁷ moves by sea—scored extra points.

However, allied navies were, at the same time, disproportionately affected by the wide-ranging cuts in defence spending from Cold War peaks. The number of warships, aircraft and personnel shrank dramatically.⁸

5 Samuel Huntington, “National Policy and the Transoceanic Navy”, *USNI Proceedings*, vol. 80, No. 5, May 1954, 483–493, 483.

6 Eric Grove, *The Future of Seapower*. London: Routledge 1990, 234. On naval deterrence, see James Henry Bergeron, *Deterrence and its Maritime Dimension*, in Sebastian Bruns/Sarandis Papadopoulos, *Conceptualizing Maritime & Naval Strategy*. Festschrift for Captain Peter M. Swartz, United States Navy, retired. Nomos: Baden-Baden 2020, 33–50.

7 Rose George, *Ninety Percent of Everything*. Inside Shipping, the Invisible Industry that puts Clothes on your Back, Gas in your Car, and Food on your Plate. Picador: New York 2013. See also Chris Parry, *Super Highway*. Sea Power in the 21st Century. Elliott and Thompson: London 2014.

8 On European navies post-Cold War, see Jeremy Stöhs, *The Decline of European Naval Forces*. Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty. Naval Institute Press: Annapolis 2018.

Some countries even took the risk of getting rid of entire sets of capabilities. Just to name three examples:

- The Royal Navy's decommissioning of "Nimrod" maritime patrol aircraft (MPA) in 2010 was just recently reversed through the procurement of new P-8 "Poseidon" MPA;
- Germany's transfers of its naval Tornado jet aircraft to the *Luftwaffe* in 2005 eliminated the multi-role fighter aircraft capability of its navy;
- The de-facto suspension of naval gunfire support capability through decommissioning of US battleships in the early 1990s continues to be a concern for inshore engagement.

Geopolitically, the integration of new member states absorbed a lot of attention and resources alike.⁹ As the Supertramp song in the title suggests, by the 2020s North American and European navies have meandered into splinter groups driven by national interests, allied dynamics, policy and resource constraints. All the while, they are directed to train and equip for warfighting first even though the host of low-end maritime security challenges has not evaporated. Rebuilding navies with their long lead times for procurement and crewing has, unsurprisingly, thus become very difficult and politically contested.

This is the broad context in which two major alliances produced separate maritime capstone documents. The North Atlantic Treaty Organization's "Alliance Maritime Strategy" was released on 18 March 2011; the Council of the European Union's "European Union Maritime Security Strategy" was published on 24 June 2014. For NATO and the EU, it was their first original maritime strategy documents worthy of the name. Both were decisively un-glossy and issued on NATO and EU websites as pdf files. These developments were also a decisive factor in the decision to create a dedicated naval strategy and maritime security conference and publication series—the "Kiel Seapower Series"—in the heart of Northern Europe. Innovation, creativity, candidness and the conviction that shared knowledge yields empowerment have driven the work of the Institute for Security Policy at Kiel University's Center for Maritime Strategy & Security (CMSS), which uses the series as an umbrella brand. The Kiel In-

9 The European Union has added sixteen new members and a reunited Germany since 1990. In the same time frame, 14 countries joined NATO, which also established an ambitious Partnership for Peace (PfP) programme. On the challenge of integrating former Warsaw Pact militaries into Western structures, see Thomas-Durell Young, "NATO's Selective Sea Blindness—Assessing the Alliance's New Navies," *Naval War College Review*: vol. 72, No. 3, Article 4, 2019.

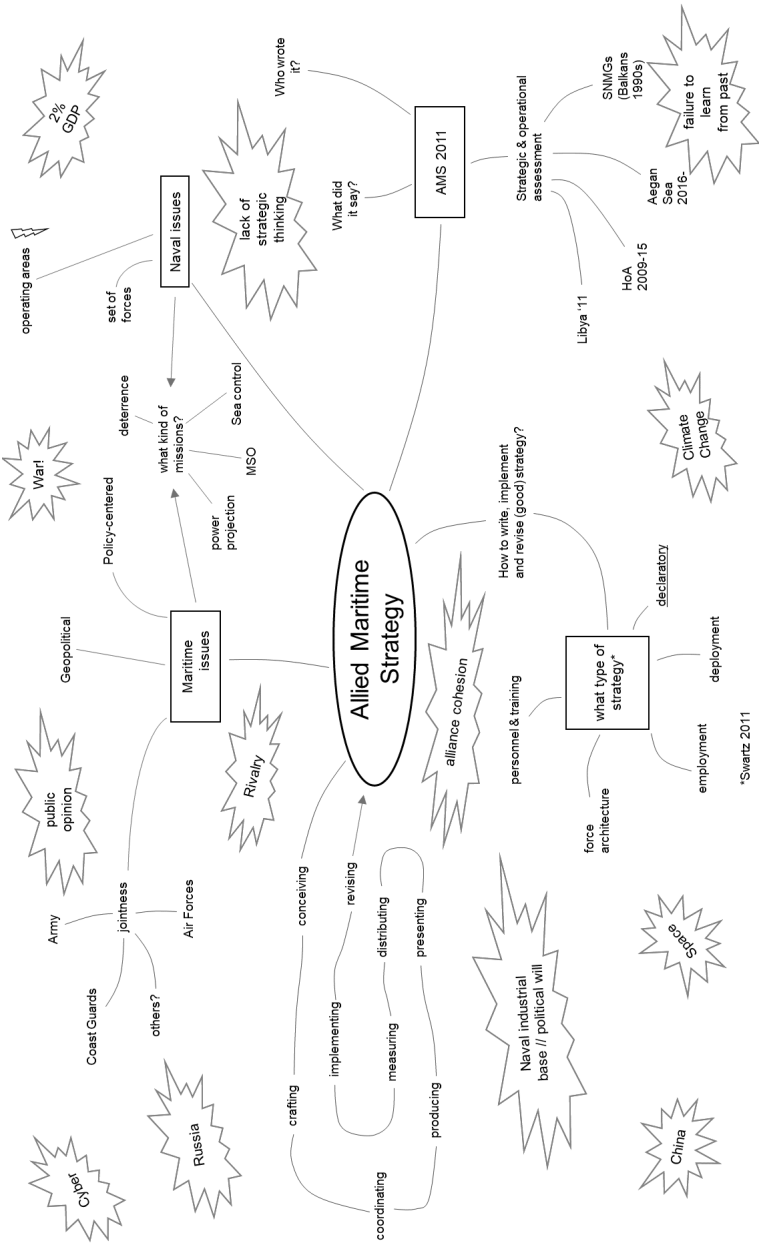
ternational Seapower Symposia (and two previous Kiel conferences with more regional foci)—or KISS, which also stands for “Keep it short & straightforward”—is the flagship event and Europe’s only dedicated sea power symposium. Three of these KISS events dealt with the ends, means and ways of allied maritime strategy, respectively. Some of the world’s most notable senior experts and up-and-coming strategists have not just participated in the by-invitation-only events, but have also lent their time and effort to contributing to this important book.

While it is beyond the scope of this essay to sketch the factors that govern how maritime strategy is produced and operationalised, Figure 1 will give a general idea of the complex and ultimately chaotic framework that affects strategy. The process is fraught with real world uncertainty, “rogue wave” events and the risks that make static strategies subject to criticism. There is never a slack tied period in which to formulate maritime strategy. The winds of change and uncertainty always gust strongly.

This is certainly true for the years since the publication of the Allied Maritime Strategy (AMS) as well as the EU Maritime Security Strategy (EUMSS). The resurgence of Russia constitutes an immediate security problem for the transatlantic community. The Middle East is ablaze in open and proxy conflicts. Alliance cohesion has been undercut severely through former American president Donald Trump’s open disinterest in alliances and NATO in particular—something that his successor Joe Biden has vowed to redress, although much damage appears irreversible. Tensions between the NATO member states Greece, France, Germany and Turkey flared up as recently as 2020. For the EU, Great Britain’s “Brexit” and the implications of the financial and refugee crises have signalled a turn towards consolidation and inward focus, not expansion. With Chinese maritime business and naval players operating regularly around the European peninsula¹⁰ and the US defence establishment firmly focused on the People’s Liberation Army (Navy) (PLA-N), a diffuse and potential violent multipolar world is emerging. Climate change, forced migration and the effects of the global Covid-19 pandemic are further challenging maritime strategists and strain naval forces.

10 Gordon Chang, “China in the Mediterranean”, Hoover Institution *Strategika* No. 62, 10 January 2020. See also Sebastian Bruns/Sarah Kirchberger, “The PLA Navy in the Baltic Sea: A View from Kiel”, *Center for International Maritime Security*, 16 August 2017.

Figure 1: Allied Maritime Strategy—its setting. [Sebastian Bruns, September 2017]



In the following essay, I will very briefly review the NATO and EU maritime strategies to describe where allied navies are coming from and where they might likely be going collectively. After all, allied navies are like a card game: one does not play a single card, but a whole hand. The goal of the following analysis is not to attribute success or failure to a strategy, or to a particular alliance or a member state. Success in strategy is perhaps best characterised as survival of the alliance and its member states. The chapter closes with a brief strategic assessment and some recommendations for future research and action in the field of allied maritime strategy.

NATO and its “Alliance Maritime Strategy”

The AMS was linked with NATO’s 2010 Strategic Concept. It highlighted collective defence, crisis management, cooperative security and maritime security as key seaborne contributions to the alliance’s security and defence. The AMS was approved on 5 January 2011 and officially published two months later—just a day before NATO members intervened militarily in Libya.

For the naval part, the Libya intervention, called Operation Unified Protector (OUP), was a high-end crisis management operation that included cruise missile attacks from submarines, gunfire support, mine clearance, air power roles, ISR (intelligence, surveillance and reconnaissance), EW (electronic warfare), blockading ports and the sinking of the Libyan fleet (pier side). Sea-based fighter aircraft and attack helicopters provided critical air interdiction capabilities that greatly facilitated the rebel victory. The international coalition quickly revealed mismatches and critical capability shortfalls in the alliance. It became clear that only the US possessed the capability to execute a fully fledged SEAD/DEAD (suppression/destruction of enemy air defences) campaign. That capability not only included strike assets such as cruise missiles and fighters, but electronic warfare/electronic attack, battlespace command and control, air-to-air refuelling, combat search and rescue, and airlifting. If that were not enough, the missile inventories of European navies were quickly depleted and in Washington DC, domestic politics on Capitol Hill factored high.¹¹ In addition, coun-

11 See James Stavridis, *The Accidental Admiral. A Sailor Takes Command at NATO*. Naval Institute Press: Annapolis, 2014, 50–65.

tries such as Germany withdrew their naval assets altogether¹²—for questionable domestic reasons, but lending real meaning to the challenge of maintaining alliance cohesion.¹³ Berlin's hesitancy to put its navy in the line of fire, while simultaneously straining the service with more and more maritime security operations (all this at a time when Germany suspended conscription to professionalise its armed forces), signalled that it felt competent enough to perform rather harmless tasks under the public radar, but left the harder jobs to allies—a disastrous signal.

Meanwhile, NATO's standing maritime groups, four of which evolved from the height of the Cold War to the present, operate on Europe's wet flanks.¹⁴ Critically dependent on Member States' assets detailed to NATO's command, the number of ships in these groups waxed and waned, sometimes comprising less than a handful. For OUP, for example, NATO had to employ an auxiliary, the ITS *Etna*, as a command ship despite it lacking much of the electronic and IT equipment necessary for this role.

From August 2009 to December 2016, NATO committed naval forces to its maritime security mission to fight piracy at the Horn of Africa. Operation "Ocean Shield" offered countries a venue to organise a counter-piracy mission without having to rely on the parallel EU operation "Atalanta" or the American-led Combined Task Force 151 (CTF-151). From 2009 to 2014, Standing NATO Maritime Group 1 (SNMG1) and Standing NATO Maritime Group 2 (SNMG2) alternated for the six-month rotations of Operation Ocean Shield duty.¹⁵ Although piracy has dropped to record lows off the Somali coast, these low-end missions further degenerated the high-end capabilities of NATO navies—and were a long way from the original *raison d'être* of these fighting forces.¹⁶

12 It should be noted that German aircrews continued to fly NATO AWACS aircraft throughout the engagement.

13 See Brooke Smith-Windsor, "NATO's Maritime Strategy and the Libya Crisis as Seen from the Sea", NATO Defence College Research Paper No. 90, Rome 2013. See also upcoming study (2022) by John D. Sherwood, *The Shores of Tripoli: The Sea Services and Libya, 1801–2011* (NHHC, pending declassification review).

14 The alliance's integrated Standing NATO Maritime Groups (SNMG) 1 and 2 are usually comprised of surface combatants such as frigates, destroyers and tankers. Standing NATO Mine-Countermeasure Groups (SNMCMG) 1 and 2 are by definition combined fleets of mine warfare boats and auxiliary vessels. NATO Maritime Command in Northwood (UK) has the lead.

15 North Atlantic Treaty Organization, "Counter-piracy operations (archived)", 16 December 2016. https://www.nato.int/cps/en/natohq/topics_48815.htm.

16 SNMG1 was born in 1968 as the Standing Naval Force Atlantic (STANAVFORLANT/SNF). SNMG2 began in 1969 as the Naval On-Call Force for the Mediter-

In the wake of Russia's incursion into Ukraine, the Wales Summit of 2014 and its follow-on Warsaw Summit of 2016 spurred the reorganisation of NATO's defence and security architecture, political outlook and naval focus. Operation "Sea Guardian" replaced the post-9/11 "Active Endeavour" in the Mediterranean Sea, where the SNMGs were now more needed than ever.¹⁷ In parallel, an uptick in naval activity in the Black Sea and the Baltic Sea, often under NATO's umbrella, offered a glimpse of the maritime dimensions of the emerging and deepening conflict with Russia. It also highlighted the need for high-end capabilities, not only for near-peer competition but also a new grey-zone/hybrid environment.

Beyond deterrence and defence, maritime security operations are still a thing of note. This is best demonstrated by NATO's carefully framed "Aegan Activity" (do not call it an operation just yet!). In the body of water that separates the two rivals—and NATO members—Greece and Turkey, an SNMG2 task unit is charged with assisting in the growing refugee and migrant crisis. Following a request by the two littoral states as well as, notably, Germany, NATO is conducting reconnaissance, monitoring and surveillance to assist local authorities and the EU's border and coastal agency, Frontex and its "Operation Poseidon".

The EU and its "Maritime Security Strategy"

In contrast to Frontex, which is in the process of building a permanent standing force of border police and coast guardsmen, the European Union's on-call naval forces (EU NAVFOR) rely exclusively on member states' contributions detailed to EU NAVFOR for limited periods of time. Many member states have to juggle national missions with both EU and NATO commitments. With shrinking forces, these nations have to confront the simple fact that a ship can only be at one place at any one time—in other words, quantity has a quality of its own. Without increasing the size of their respective fleets, many member states will continue to suffer from severe operational and defence policy constraints.

anean (NAVOCFORMED) and evolved into the permanent Standing Naval Force Mediterranean (STANAVFORMED/SNFM) in 1992. They were renamed in 2004 and 2006 respectively, and the regional focus was lifted.

- 17 See Alessandra Giada Dibenedetto, "Implementing the Alliance Maritime Strategy in the Mediterranean: NATO's Operation Sea Guardian", NATO Defence College Research Paper No. 146, Rome 2016.

Much like NATO, the EU published its first strategic document *ex post*. In an effort to ramp up the security of the United Nations' World Food Program's (WFP) cargo ships providing critical support to the starving people of Somalia on the Horn of Africa, the EU established its first unique naval activity as early as December 2008, when EU NAVFOR "Operation Atalanta" naval vessels began escorting the humanitarian assistance ships through the piracy-prone waters off the Horn of Africa. Coordination was quickly established between EUNAVFOR Atalanta, NATO and CTF-151, and the vast region was divided up into patrol sectors. All intelligence sources (especially maritime patrol aircraft) shared information in real time with sector leaders, who then assigned appropriate forces to react to each identified threat.

The decrease in piracy incidents from record highs (2012) to less than a handful (2020) can be attributed to a variety of factors: the integrated approach of Atalanta with NATO and CTF-151; the use of convoying and private security forces by shipping companies; a slightly improved security situation on the ground; and the fact that EUNAVFOR units can arrest persons suspected of piracy and prosecute suspects in either EU member states, regional states or third states.¹⁸ National or multilateral tasking saw American, Japanese, Chinese, Russian and South Korean warships dispatched to the region. Crucially, by conducting expeditionary operations, the PLA-N (and to a lesser degree the Japanese Maritime Self-Defense Force, JMSDF) gained their sea legs at the Horn of Africa. Naval activity around the Horn of Africa truly provided a first glimpse into the emerging 21st century multipolar world buttressed by sea power.¹⁹ In parallel, a division of labour emerged between NATO and the EU. Maritime security missions, maritime domain awareness and a clear link with the EU Capacity Building (EUCAP) Nestor/Somalia mission (a civilian deployment initiative designed to build maritime law enforcement capacity in the Horn of Africa) characterised "Atalanta", whereas NATO and CTF-151 focused on obtaining and processing hard military intelligence, fighting piracy and terrorism ashore and at sea, and naval coalition formation in the wider sense.

18 EEAS, Operation Atalanta, Fact Sheet, 2020; EEAS, Key Facts and Figures EU-NAVFOR Somalia-Operation Atalanta. <https://eunavfor.eu/key-facts-and-figures/>, accessed 1 April 2020.

19 Sebastian Bruns, "Multipolarity Under the Magnifying-Glass: Establishing Maritime Security Off the Horn of Africa", *Sicherheit und Frieden (S+F) / Security and Peace*, vol. 27, No. 3, 174–179.

In light of the significant rise in seaborne mass migration in 2015, the EU quickly came up with its second EU NAVFOR. “Operation Sophia”, named after a child born to her rescued mother on board the German frigate *Schleswig-Holstein*, assembled a diverse coalition of maritime assets in the Central Mediterranean to replace an earlier effort by Italy known as Mare Nostrum and augment Frontex coastguard vessels under Operation Triton. Sophia’s major mission was to fight human trafficking and other types of criminal activity, but because of the legal and humanitarian obligation to rescue mariners in distress at sea, the operation evolved into more of a large-scale immigrant search and rescue operation than anything else. While saving thousands of migrants from a potential death at sea, the operation was criticised for facilitating migration and was ultimately suspended in autumn 2019.²⁰ A new EU NAVFOR mission called “Irinì” replaced “Sophia” in 2020. Its focus is monitoring illicit Libyan oil exports, training and building up the capacity of the Libyan Coastguard and Navy (which began during Sophia), and contributing to disrupting human trafficking mainly through aerial surveillance. It relies mainly on Libyan coastguard units and international non-governmental sea rescue organisations such as Sea Watch and Sea-Eye. The decline in migration in the Central Mediterranean can mainly be attributed to the Libyan coastguard, which has been successfully interdicting most migrant dinghies in Libyan waters since 2018.²¹

Strategic Takeaways

It is hard to overstate that in defence analyses and in practical maritime strategy, process counts, not products. Maritime strategies can only represent the state of affairs at a certain point of time. It appears to be a feature of democracies that they are often very cautious (some may say unwilling or unable) to proactively plan ahead for more than a legislative period. The reason is simple: political majorities shift. A similar observation holds true for alliances that are made up of democratic member states. In addition, strategies are immediately subject to interpretation, operationalisation and, perhaps most important of all, events that potentially change the business model of said strategy. These can be revolutionary like the catastrophic

20 European Union External Action, EU CSDP Missions & Operations for Human Security, May 2019.

21 See EU Operation Irinì. <https://www.operationirini.eu/>.

COVID-19 pandemic, which has impacted military readiness and societal priorities in toto. They can be evolutionary, too, in changes in international politics that govern the roles and missions of naval forces altogether. For example, Russia's hybrid and proxy warfare has prompted an "All Hands" policy evolution for NATO and many of its member states. Anti-submarine warfare, surface combat and mine countermeasures are at the forefront of many naval discussions—again.

Russia's annexation of the Crimea and the alliance's subsequent adoption of concepts signalled a "naval turn" for NATO. It is a testament to the agility and foresight of the AMS's authors that the 2011 strategy still holds value for the North Atlantic pact.²² Concurrently for the European Union, the refugee crisis in the Mediterranean and Aegean Seas since 2015 has signalled a "maritime turn" in that it has driven home to decision makers the need for maritime security operations and humanitarian assistance.

Over time, NATO and the EU have found a very useful way of sharing of responsibilities in line with member states' political priorities. Where maritime security missions are in high demand, warships can assemble under EU NAVFORs to promote good order at sea, secure sea lines of communication, provide a small if meaningful strategic presence, and counter some of the most gruesome organised crime and hardships at sea.²³ On the other hand, providing ships under a NATO mandate and in standing maritime groups provides training and execution of the "sharp end of the spear" in much-needed warfighting skills. They too provide naval diplomacy and constabulary roles, perhaps to a lesser degree and certainly dependent on member states' political stances. If NATO strongly recalled that it is a military as well as a political alliance, according to the 1967 Harmel Report, and got its member states to understand this properly, the alliance could be decisively stronger "from the sea". The efforts to reform the alliance through an updated strategic concept offer ample room to implant more sea power awareness in the alliance. This will necessarily include a hard look at the future of command and control, with representation of maritime (not just naval) leaders in joint commands, and the burgeoning number of talking shops such as the NATO "Centres of Excellence" and

22 On the return of the North Atlantic as a key theatre, see Magnus Nordenman, *The New Battle for the Atlantic. Emerging Naval Competition with Russia in the Far North*. Annapolis: Naval Institute Press 2019.

23 For an introduction to the breadth and depth of crimes and misdemeanours at sea, see Ian Urbania, "The Outlaw Ocean: Crime and Survival in the Last Untamed Frontier". London: Bodley Head, 2019.

surplus regional commands. A cautiously updated NATO maritime strategy would fit well into such an endeavour.²⁴

If and when war breaks out, the alliance needs to be prepared to deter, fight and favourably terminate hostilities. An updated Concept of Maritime Operations not unlike the CONMAROPS of the 1980s should also be produced.²⁵ Emerging coalitions of the willing, like the European-led Maritime Situational Awareness Operation Agénor, which at the time of writing is patrolling the Persian Gulf to secure international shipping, will be another factor to consider. 30 NATO member states might have trouble agreeing on naval responses to international problems, especially because such solutions entail a buy-in from landlocked countries and those who only operate limited coastal navies. If and when war breaks out, the alliance needs to be prepared to deter, fight and favourably terminate hostilities.

Meanwhile, the EU's case is slightly different given its membership roster and its sense of purpose. The Permanent European Structured Cooperation (PESCO) is a sign of a greater focus on defence, and EU NAVFORs are a model to be studied in greater depth. This author has suggested that the EU and interested member states should pursue creative ways to accelerate integration and maritime security capabilities through an auxiliary EU navy or perhaps by having an EU NAVFOR (rather than individual member state navies).²⁶ The EUMSS and its well-placed implementation plan are very useful items for the political process of conceptualising and operationalising maritime strategy.

24 See Steven Horrell, Magnus Nordenman and Walter Slocombe, "Updating NATO's Maritime Strategy", Atlantic Council Brent Scowcroft Center on International Security, July 2016.

25 See Palmer, Diego A. Ruiz (2013). *A Maritime Renaissance – Naval Power in NATO's future*. In: Krause, Joachim and Bruns, Sebastian (eds.). *Routledge Handbook of Naval Strategy and Security*, 367; Swartz, Peter M. (2003). *Preventing the Bear's Last Swim: The NATO Concept of Maritime Operations (ConMarOps) of the last Cold War Decade*. In: Loucas, I. and Marcoyannis, G. (eds.). *NATO's Maritime Power 1949–1990* (47–61). Inmer Publications, 48.

26 See "Towards a Standing European Union Auxiliary Navy" (with Moritz Brake). Brussels: Friedrich-Ebert-Foundation, July 2020; "Building European Seapower: Reinvigorating EU naval strategy and maritime capabilities for the 2020s". *Tidskrift i Sjöväsendet*, vol. 183, No. 5 (2020), 541–550.

A Research Agenda

Still, we—the collective assemblage of naval strategists, defence policymakers, academics, maritime thinkers, sailors and soldiers—know precariously little about allied maritime strategy and its operationalisation. Previous works have focused largely on national maritime strategy.²⁷ Others strung groups of countries together for a comparative analysis.²⁸ Few recent in-depth studies focus on the naval efforts of the alliance itself or take a deeper look at the national-to-allied maritime strategy relationship.²⁹ A study on the SNMGs/SNMCMGs would be of utmost importance in developing a methodology with which to assess if and how combined operations at sea and from the sea make a difference to alliance cohesion and the attainment of defence and deterrence objectives. The EUMSS would also warrant much more academic and policy-relevant research, in particular reviewing the effectiveness of navies under EU NAVFOR roles and reviewing challenges and opportunities related to “ad hoc coalitions”. If the Cold War and the post-Cold War world really were abnormalities in the use of navies (the former in its overwhelming concentration on naval warfighting, the latter in its emphasis on maritime security), then the 2020s and the potential of the respective worlds of Alfred Thayer Mahan and Julian Corbett

27 For the US Navy, see Peter Haynes, *Toward a New Maritime Strategy: American Naval Thinking in the Post-Cold War Era*. Annapolis: Naval Institute Press, 2015; Amund Lundesgaard, *Controlling the Sea and Projection Power*. U.S. Navy Strategy and Force Structure After the Cold War. Dissertation: University of Oslo, 2016; Sebastian Bruns, *US Naval Strategy and National Security. The Evolution of American Maritime Power*. London: Routledge, 2018.

28 Gary Weir and Sandra Doyle (eds.), *You Cannot Surge Trust. Combined Naval Operations of the Royal Australian Navy, Canadian Navy, Royal Navy, and United States Navy, 1991–2003*. Washington, DC: Naval History and Heritage Command, 2013; Jeremy Stöhs, *The Decline of European Naval Forces. Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty*. Annapolis: Naval Institute Press, 2018.

29 Notable exceptions include Dean C. Allard, “Strategic Views of the US Navy and NATO on the Northern Flank, 1917–1991”, *The Northern Mariner* XI, No. 1 January (2001), 11–24; Leon A. Edney, “50 Years of the Cold War: A Maritime SACLAN Perspective”, in: Karl L. Kleve (ed.), *50 years with the Cold War*. Report from the conference in Bodø, 3–4 June, 1999 (Bodø 1999); Geoffrey Till, “Holding the Bridge in Troubled Times: The Cold War and the Navies of Europe,” *The Journal of Strategic Studies* vol. 28, No. 2 April (2005), 309–337. I am indebted to Anselm van der Peet for pointing these out. See also Joel Sokolsky, *Seapower in the Nuclear Age. The United States Navy and NATO 1949–1980*. Annapolis: Naval Institute Press 1991; Corbin Williamson, *The U.S. Navy and its Cold War Alliances, 1945–1953*. Lawrence: University of Kansas Press 2020.

merging will see a greater demand for sound allied maritime strategy, and the understanding thereof.

Epilogue

The study of sea power theory and practice cannot be left confined to the disciples of Mahan or Corbett, or to the classrooms at the naval academies. The maritime domain affects us all, and bridging the gap between history and policy—as exemplified in the events and publications of the ISPK’s Center for Maritime Strategy & Security—will go a long way to understanding many contemporary opportunities and shortfalls when it comes to the sea. My sincere gratitude also goes out to everyone who contributed to this book; in particular the 20 authors and the two editors. The Konrad Adenauer Foundation (Berlin) made the production of this edited volume possible through a substantial grant.

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Why Maritime Strategy

Keith E. Blount

Setting the scene

This publication sets an ambitious, yet fundamentally important agenda to look at allied strategic thought in the maritime sphere and revisit the current Alliance Maritime Strategy of 2011 in the light of recent and indeed future geopolitical developments. The end of the Cold War marked not so much a finish line as the starting gun of a new race that has not yet been won. Indeed, the distance over which the course is set, its obstacles and even those competing is ever changing. This conundrum creates huge academic and, of course, military interest, and the need to get and stay ahead of events is a profound and ongoing challenge. Some would argue that we in NATO have been slightly off the pace and what is needed now is a spurt to regain control of the competition. I assert that we are doing just that, and that there is much to be confident about. NATO's new Military Strategy (NMS) of May 2019, the first in almost 50 years, has prompted a broad swathe of follow-on work, with the Concept for Deterrence and Defence of the Euro-Atlantic Area (DDA) forming the spine. Subordinate Directives and Plans are already in work and will form the core of NATO's new thinking and writing in 2021. Furthermore, NATO is embracing the challenges set by new competitors in an age of new competition through its NATO 2030 work. NATO's 'ends, ways and means' are all being discussed and this publication will doubtless advance the debate. There is an urgency to do all of this work fast and well and I, as NATO's Maritime Commander and principal maritime advisor, will be kept busy as the maritime domain features prominently throughout.

Do we need to change?

There is always a push for change. Whether it is the media, academics, or new and energetic military Commanders, we are all encouraged to drive change. However, this clamour for change does sometimes need a little tempering and adjudication by the 'if it ain't broke' maxim. Unquestion-

ably, the catalytic events of 1989–1991 required the complete recalibration of NATO, and while some would argue that getting to its Strategic Concept of 2010 was a journey conducted at a somewhat pedestrian pace, what it delivered was totemic. Above all else, it placed the core tasks and principles of collective defence, crisis management and cooperative security at equal importance. It introduced the need for NATO to orientate itself to new threats and challenges such as cyber and energy security and the emergence of new technologies. It also created a vision of ‘nuclear zero’ and kept the door open for further enlargement—all this within a wrapper of cost effectiveness for the taxpayer. These strategic pillars and themes still sound fresh and right. When the Allied Maritime Strategy (AMS) followed in 2011, its opening words sound remarkably contemporary, even 11 years on:

“The evolving international situation of the 21st century heralds new levels of interdependence between states, international organisations and non-governmental organisations, the increasing complexity of global commerce, and potential threats from both state and non-state actors. Combined with the rapid spread of advanced weapons such as high-performance aircraft, submarines, and precision-guided munitions, the alliance may be challenged in mission areas it has traditionally dominated.”¹

The Strategy’s themes expanded upon the three strategic pillars within the Strategic Concept and added a fourth, that of maritime security. This allowed maritime thinking to range from the classical Article V, high-end conflict to more constabulary-orientated tasks and law enforcement. Given the scourge of Indian Ocean piracy at the time and NATO’s response in the form of Operation OCEAN SHIELD, it was unquestionably right then and still feels right now. The strategic building blocks created over 10 years ago are hard to argue with, but they do need to be refocused in terms of ‘what’s new’. Put another way, where the cornerstones of the strategy seem right, there remains the need for updated thinking on how and where we should be applying them—and against whom.

1 NATO, 11 June 2011, *Alliance Maritime Strategy*, www.nato.int/cps/en/natohq/official_texts_75615.htm, accessed 15 January 2021.

What's new?

There are a lot of contemporary challenges that keep me thinking and to varying degrees concern me. Positively, as I will outline, they are all being carefully considered within NATO's ongoing work following the NMS, and I feel able to influence their trajectory and focus. This important and timely volume provides the reader with an excellent stocktake of many current and future challenges. By way of a primer, let me elaborate on some of the key themes in my 'in tray' and then explain in a little detail what we're doing about them.

It's still (mostly) about Russia. Russia remains the competitor that attracts NATO's greatest strategic focus. The attempted recapitalisation of its fleet, however, hasn't been without challenges or failure. The 2005 headmark to build a new class of aircraft carriers (sea trials were forecast for 2017)² is yet to materialise. The Yasen-class submarine, while very capable, has its origins as far back as 1977. The solitary commissioned vessel in the class, Severodvinsk, has already become somewhat of a workhorse before the second boat, the Kazan, has been commissioned. And, the Lider-class 'Aegis-like' destroyer programme appears to have been cancelled in toto. However, before we relax too much, we should remember that Russia is very good at keeping old vessels running. No one should take the Delta, Oscar, Victor, Sierra, Akula, Kilo or other 'research' class submarines for granted. We should take careful note of the 'kalibrisation' of its forces and of the six classes of patrol vessels Russia is building quickly—all of them deployable, Kalibr capable and operating as an effective extension to shore-based A2AD systems. We should also remember the advantages of common equipment throughout every class, the same communications systems, EW systems, training, tactics, rules of engagement, etc., which all serve to give Russia tempo. Add to this, a political and cultural will to reassert its military adventurism and indeed extend it and Russia remains a very credible maritime nation.

Suddenly, China has arrived too. The PLA(N) has built the equivalent tonnage to that of the current Royal Navy in the last 5 years³ and is using it further afield more regularly. I blame some of this on the Somali pirates. The way in which nations with differences converged on the Gulf of Aden

2 Ilya Kramnik, 20 May 2013, *Russian Aircraft Carriers: time to grasp the nettle*, Russian International Affairs Council.

3 John Harper, 3 September 2020, *Eagle vs Dragon: How the US and Chinese Navies Stack Up*, National Defense Magazine.

and the Indian Ocean ten years ago was trumpeted as a triumph of international responsiveness in the face of a threat to the global economy. The Chinese were one of the first navies to arrive and quickly got the hang of it. Setting their escort routes up to the north of the Internationally Recommended Transit Corridor, they got the taste for out-of-area deployment as a group, so much so that they started to arrive with that niche counter piracy asset, the nuclear powered submarine. Then they—and many other nations—built a base in Djibouti. Now China is a permanent fixture in the region, able to sustain expeditionary operations, while still conducting its counter piracy patrols. The proximity to the Mediterranean through the Suez has seen some deployed task groups returning home the long way, and while we still tend to point at Chinese warships in the NATO area of responsibility in the same way people used to point at aeroplanes, they are by no means uncommon. However, despite a fleet size soaring towards 400 warships, it is China's economic involvement in the European theatre that is perhaps most thought-provoking. By 2018, the state-owned COSCO Shipping Ports and the Chinese Merchants Port Holdings had financial interests in 13 European and Mediterranean ports, forming the maritime flank of the Belt and Road Initiative.⁴ The big and mysterious question is 'what's it all for?'

International terrorism. The general trend of international terrorism has been downward since 2014.⁵ However, the global pandemic is forecast to bring somewhat of a resurgence in its wake.⁶ Economic downturns and the hardship they create, continued migration, deepening interstate friction, new administrations, further acceleration of technologies such as AI and the even wider use of/reliance on social media all present opportunities to terrorists. Increasingly blurred boundaries between state, non-state and non-aligned actors and their potential spillover into the murky world of the 'grey zone' won't help. Neither will the time lockdown has provided the malfeasant terrorists to think and plan. We remain postured resolutely against terrorism and will, I fear, remain so for the foreseeable future.

The capability challenge. Keeping ahead of the threat is the essence of winning, but it isn't easy. The logarithmic acceleration of technology commonly outstrips procurement processes. Capabilities that were hitherto

4 Louise Vogdrup-Schmidt, 29 January 2018, *Chinese Investors own 10 per cent of Europe's Ports*, Shipping Watch.

5 Statistics vary, but the general trend is widely accepted. See, for example, www.statista.com/statistics/271514/global-terrorism-index, accessed 13 January 2021.

6 See, for example, Colin P Clarke, 5 January 2021, *Trends in Terrorism: What's on the Horizon in 2021?*, FPRI.

thought of as domestic security challenges, such as cyber ones, are being militarised and weaponised, challenging not only the ways of war (and peace), but the manner in which governments and defence departments are structured and organised. Parochially, from the maritime perspective, while space prevents a deeper analysis, I would point to the underwater domain as the one that requires most work. Traditional ASW has effectively been recast as Undersea Warfare (USW). Protecting submarines and ships of all kinds of course remains important, as does denying any enemy their use. However, add to the mix the estimated 1.2 million km of undersea cables that transact 99% of the world's data⁷ (and the fact there are helpful charts on the internet to tell you where they are), and we have a new and escalating challenge that is yet to be fully met. I will also mention briefly hypersonics and carriers because they form an interesting and trending topic. I acknowledge that China and Russia are experimenting with hypersonic missiles⁸. I would, however, argue that the determination and attendant costs required to achieve any such capability underline the value in which carriers are still held. The fact that aircraft carriers around the world are being built faster and in greater numbers than at any time since World War 2 reinforces the point. I would also assert that if it is in your strategic calculus (for it is strategic) that on a given day you will try to sink one of NATO's super carriers, you had better have thought through the next move on the chess board, for whether you hit it or miss it, the consequences are likely to be the same.

NATO's new frontiers. There is no question that the boundaries of NATO's AOR are being stretched and the areas in which we should operate are discussed and debated frequently. There are, of course, policy and political decisions needed to change our established boundaries (as was the case with Afghanistan, Iraq and the Horn of Africa), but the reasons why this is an important topic are clear. One factor is that globalisation is not only being enabled by technology, but also through climate change. The connectivity of east to west (globalisation works both ways!) is becoming easier through the Northern Sea Route. Russia's impending Chairmanship of the Arctic Council will most likely lead to Russia seeking to normalise its role as the region's 'steward',⁹ which would do little to smooth the

7 See, *Submarine Cable 101*, at www2.telegeography.com/submarine-cable-faqs-frequently-asked-questions, accessed 5 January 2021.

8 See, for example, Benjamin Brimelow, 10 January 2021, *US aircraft carriers still rule the seas, but Russia and China both have plans to change that*, Business Insider.

9 Dr Elizabeth Buchanan, 4 January 2021, *Russia Plants a Further Flag in the Arctic*, High North News.

nascent economic, territorial and other security tensions that already exist. Routinely exploited by Russia, increasingly China and with the help of a building fleet of ice breakers, the Northern Sea route—in a potential rather than absolute sense at the moment—is a strategic issue. Equally, however, our frontiers are being extended by domain—principally upwards into space. Both it and cyberspace form the new domains that we are seeking to link through the variously labelled Multi Domain (MDO) or All Domain Operations.¹⁰ This creates new challenges and opportunities, applies inherent ‘hybridisation’ to our planning and thinking, and poses subsequent questions relating to the balance between soft and hard power and the very foundations of how deterrence works.

What are we doing about it?

Future thinking—NATO 2030. NATO recently published ‘NATO 2030 – United for a New Era’.¹¹ It is a report by an appointed ‘Reflections Group’ and as such is not decisional, but it does get to grips with the themes I have outlined above. From a maritime perspective, it is very helpful. It is clear on RFN regeneration, risks at choke points and the burgeoning Northern Sea Route. It calls for the establishment of a NATO consultative body on China, which it identifies as a competitor, and recommends that ‘NATO must devote much more time, political resources and action to the security challenges posed by China’.¹² It ranges across the geopolitics of the Arctic and promotes a new Centre of Excellence on Climate and Security. It continues to encourage a determined boot held firm on the neck of terrorism. And it welcomes the new domain of space, underlining the importance of space security throughout and linking it with the other domains. In sum, the document reads as a ‘strategy in waiting’ and its most fundamental and important call is for a new Strategic Concept to update that written in 2010.

DDA and NATO Command Structure Adaptation (NCSA). However, strategy is not just about writing strategy. It is also about thinking strategically, and the NMS and DDA have catalysed this. The DDA is the core executable document to stimulate thought and is very maritime-focused; not

10 Cyberspace was recognised as a domain at the Warsaw Summit in 2016 and space was established as a NATO domain in 2019.

11 Available at: www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Relection-Group-Final-Report-Uni.pdf, accessed 14 January 2020.

12 *ibid.*, 12.

in any skewed or disproportionate way, but simply because 80% of SACEUR's AOR is indisputably wet.

At its heart, the DDA makes abundantly clear the need to be ready to fight and win, but moreover that we must continue to win the peace. In this sense, deterrence must be *decisive*. The DDA provokes thinking on managing deterrence by maintaining a deterrence posture, ultimately set by SACEUR. In the maritime sphere, an overall awareness of the domain is the starting point, where intelligence and the operational plot of 'blue and red' are fused and disseminated. The new Standing NATO Maritime Framework (SNMF) provides the ways and means of achieving this. The SNMF seeks to ensure that the traditional building blocks of deterrence—capability, intent and communication—are cohered and aligned in a way that 'joins up the blue dots'. Allied activity should be harmonised for its deterrent effect to be clear and unambiguous. The DDA applies a sophistication to deterrence thinking and is designed to prevent unnecessary provocation or miscalculation. Too often we are ready to react to Russian activity by simply shadowing it and giving it a hard stare. This 'kiddies' football' analogy of simply 'following the ball' is not my idea of deterrence: it must be thoughtful and responsible.

The adaptation of NATO's Command Structure (NCSA) has delivered a bigger headquarters for MARCOM. It will provide us with deeper and broader expertise to command in peace or war and establishes my role as NATO's Maritime Theatre Component Commander. Furthermore, the NCSA has seen the formation of a new Joint Forces Command (JFC) in Norfolk, Virginia. This Atlantic-focused Command provides further deep understanding of the AOR in this critical region. It, of course, recognises the resurgence of Russia's naval activity and provides further resilience to the command structure, but in peace its fundamental role is to ensure we get deterrence right.

The role of NATO's standing forces is reinforced through the DDA. As the very front line of all maritime activity in peace, crisis or conflict, permanently formed groups of ships have been a fixture in NATO's force structure since the idea of Standing Naval Force Atlantic was conceived by Admiral Richard G. Colbert in 1968. The established force generation process sees nations committing ships to one of the four groups for six-month periods, during which they operate under MARCOM command. However, while the DDA doesn't challenge this norm, it encourages short-notice, staccato contributions from vessels operating under national command, which temporarily transfer the authority of command to MARCOM to respond to any given situation and augment the Standing Forces. For nations, this is as much about a new way of thinking as it is

doing, and its early successes have been very promising. Again, it's all about 'joining up the blue dots'.

The threat of terrorism is met, head on, in the DDA and features prominently in MARCOM's daily business. Operation SEA GUARDIAN (OSG) is centred on countering terrorism and is a 24/7 activity 365 days a year. Targeted Focused Operations augment daily business. Again, all of this is underpinned by maritime situational awareness and the willingness of nations to contribute. 'Associated Support' (AS) to operations is a way in which nations bolster NATO activity while operating under national command. Unlike the pulsed contributions to the Standing Forces, it doesn't involve a change of C2, but requires vessels and aircraft to be alert and report what they see. It is ideally suited to OSG and last year saw an increase of more than 100% in AS contributions, which was extraordinary. As such, OSG continues to be a successful operation and has been very important in spreading the word of NATO generally and the NATO Shipping Centre specifically. Furthermore, it provides daily reassurance to the merchant marine sector that NATO is watching over them.

Future capability and warfighting. In parallel with the NMS, NATO has been writing a further strategic document titled the NATO Warfighting Capstone Concept. This is an equally seminal piece, authored by Allied Command Transformation, which is set within a 20-year horizon. It is an overarching concept that guides NATO's future warfare development and will inform the NATO Defence Planning Process, which aims to ensure nations are properly equipped to meet the threats of today and those in the future. MARCOM has added its input to it, and the need to keep pace with USW is reflected well. However, one of the inevitable—and helpful—conclusions of this work is to reaffirm the need to extend our thinking, tactics, training and procedures beyond the 'Joint' domain, which considers warfare in a functional way,¹³ to the 'multi-domain', which considers how warfighting needs to be harmonised across the five warfighting domains.¹⁴ Accompanying the inclusion of the most recent 'Space' domain is the formation of a new NATO Space Centre, within NATO's Air Command in Ramstein, which was announced by Defence Ministers in October of last year. We should remember that NATO's Cooperative Cyber Defence Centre of Excellence was conceived by Estonia in 2004 and established in 2008 and that SHAPE has had its Cyber Operations Centre since 2018. The most

13 Classically, the different armed forces combining to deliver greater effect than their sum.

14 Maritime, land, air, cyberspace and space.

recent Joint Air Power Competence Centre conference was titled ‘Shaping NATO for Multi-Domain Operations of the Future’ and has acted as an accelerant to our thinking.

However, there is more to do in terms of MDO. It introduces new challenges and opportunities in equal measure, but reconciling the two will require careful thought—and resources. Conceptually, I would argue it’s relatively straightforward to look well ahead and, in broad brush strokes, illustrate the way in which future wars could be fought and how new deterrence could be delivered. Designing a warfighting ‘system’ for 2040 is not the greatest challenge.¹⁵ What poses the real complexity is how you form a capability pathway to get there. In often cumbersome procurement cycles and processes, how do we judge the right point to step away from a manned vessel and deliver an unmanned platform? If the capability that operates in different domains is resourced in different government departments, how do we create the right balance of investment decisions to create *coherent* capabilities? If resources come with control, how will the MDO of the future be commanded? These chewy issues are, helpfully, well surfaced in NATO and our exercise programme—at all levels—now embraces MDO in order that momentum is maintained. It’s exciting stuff.

To conclude

NATO remains, unassailably I would argue, the most successful political–military alliance in our history. As its membership has continued to broaden, recent thinking around how NATO remains relevant and contemporary has deepened. Longer-range horizon scanning has been captured within NATO 2030, and while the analysis therein is yet to be translated into policy or activity, it opens an aperture for change and further adaptation. More proximate is the work flowing from the NMS, with the DDA acting as the handrail. Within all of this, there are potential strategic departures from NATO’s established ‘ends, ways and means’. China would be one. Broader interest in a wider Arctic area would be another. Multi-domain operations that consider and embrace space and cyberspace as equal (or even superior) to the more terrestrial domains could define a new ‘Revolu-

15 The term ‘network centric warfare’ was a term with traction in the 1990s, but has been somewhat lost in a blizzard of evolved ideas, most with attendant acronyms. I suggest, however, that it remains a useful anchor point for how we should operate. If one platform underlines this, it’s the F35.

tion of Military Affairs'. This could have strategic consequences for thinking on both deterrence and warfighting. Whether all of this leads to more strategic thought, a new strategy or both is not for me to decide, but the fact it's being spoken of, debated here and, in the case of the DDA, being put into action should all be considered as positive. Any change must, as SACEUR would remind us, be at 'the speed of relevance'. This will continue to require political will, strong leadership and the resources to match. But the other requirement will, as long as the world's oceans constitute over 70% of the planet's surface, be a strong maritime voice. MARCOM provides that voice for NATO and is immensely proud to do so.

Combined and Joint Operations at Sea: Some Reflections from History

*Sarandis Papadopoulos*¹

This essay is indebted to the edited book *You Cannot Surge Trust*, in which the author played a part, extending its emphases here in three ways: foremost, navies must continually remain true to national political and strategic goals.² Second, the tactical problem of uniting constantly manoeuvring sailing ships and, subsequently, operationally managing steam-powered vessels spread over wide areas are both harder than usually thought. In relation to that last point, it bears recalling that the 1944 Battle of Leyte Gulf was fought over an area larger than the countries of Afghanistan or Ukraine, or the American state of Texas. The immensity of the oceans therefore demands different types of military command and control than for land or air operations. Finally, and most intangibly, effective combined operations by maritime forces demands a human level of cooperation which cannot spontaneously arise or be improvised. Instead, participating navies must rely upon creating trust between those commanding and serving on ships in multinational operations to cement success.

Multinational, or combined, naval activities are older than commonly assumed. Whether dealing with the classical Greek city states' unified action against the Persian Empire at Salamis in 480 BCE, or both the Holy Alliance and their Ottoman opponents at Lepanto in 1571, combined operations are not new. That said, the coalition, alliance and empire taking part in these battles did not face the technical, tactical or command problems which have challenged more recent partnerships at sea. For example, at Lepanto both sides fought in similar patterns, integrating ships of different nationalities, even in multilingual squadrons.³ While strategically no-

1 The comments and opinions of the author here are personal and do not represent those of the Department of the Navy, Department of Defense or the United States Government.

2 Gary Weir and Sandra Doyle (eds.), *You Cannot Surge Trust: Combined Naval Operations of the Royal Australian Navy, Canadian Navy, Royal Navy, and the United States Navy 1991–2003* (Washington: Naval History and Heritage Command, 2013).

3 John F. Guilmartin, *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century* (London: Cambridge, 1974), 232–248.

table, such combined battles were short-term and generally stood as exceptional cases.

In the modern era, multinational naval action, and problems, became more recognisable. Starting with the 17th century Anglo-Dutch Wars, fleets of ships discerned by “rate”, *i.e.* size, and globally distributed, created room for unified efforts. Still, manoeuvring ships under sail meant balancing what we today term command and control. When an English and French fleet fought the outnumbered Dutch in May and June 1673 off Schoeneveldt and Texel, poor communications played a role in allied tactical defeats.⁴ Failure at the second battle allowed the Dutch Rear Admiral Michiel de Ruyter to break off the action, preserving his force, saving the Republic from invasion and ultimately forcing England’s Charles II to leave the war. Given the concentration of Dutch naval power, the allies had needed to take unified tactical action, but their ships fought together with difficulty and ultimately failed.

The next 150 years saw overseas colonies, and shifting naval alliances, absorb European attention. English naval power of the era generally meant continental nations united against it, forcing it to face naval alliances four times. Typically, these were loose strategic relationships, with navies waging war in parallel. Fifty-three major naval battles took place between 1688 and 1815, seven with more than one navy on a side. More strategically, during the Seven Years War one-third of English merchant ships were captured by French and Spanish privateers.⁵ Only during the American Revolution did France, Spain and the Netherlands unite to create maritime success against Britain.⁶

Speaking jointly, this era’s naval power delivered mobility never seen before. During the Seven Years War, British fleets supported expeditionary units against coastal France, creating what Julian Corbett called “the deter-

4 N.A.M. Rodger, *The Command of the Ocean: A Naval History of Britain, 1649–1815* (New York: W.W. Norton, 2005), 84–85, Michael A. Palmer, *Command at Sea: Naval Command and Control since the Sixteenth Century* (Cambridge: Harvard, 2005), 60 and Brian Tunstall, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics 1650–1815* (Edison: Wellfleet, 2001), 35–37. See also Alfred T. Mahan, *The Influence of Sea Power Upon History, 1660–1783* (Boston: Little Brown, 1890), 152–158.

5 Sam Willis, *Fighting at Sea in the Eighteenth Century: The Art of Sailing Warfare* (Woodbridge: Boydell, 2008), 201–216 and Mahan, 318.

6 Larrie D. Ferreiro, *Brothers at Arms: American Independence and the Men of France & Spain Who Saved It* (New York: A.A. Knopf, 2016), 248–254 for Spanish Gulf of Mexico operations, and 257–263 for the Anglo-French Battle of the Chesapeake. Compare with Mahan, 378–390.

rent effect of troops upon the sea”, maintained English troops in Hanover, as well as landing forces in Nova Scotia, Cuba, Guadeloupe, the Philippines and, most brilliantly, Quebec.⁷ This did not mean joint action at sea won every time, for several of these efforts took two attempts to succeed. Similarly, naval allies did not always win wars: despite strengthening each other off Toulon (1744), when a mixed Spanish and French fleet defeated the English, the battle was not decisive for the war’s result. In 1805, a similar allied fleet was crushed at Trafalgar, effectively limiting Napoleon’s maritime ambitions. Naval specifics were foremost, just as poor command and control had hindered the English at Toulon. In contrast, the outnumbered Vice Admiral Horatio Nelson faced a poorly supported Spanish navy, and post-revolution French crews, decapitated of good leadership, allowed superior Royal Navy ship-handling and tactical clarity to ensure the English were victorious.⁸

The ensuing “Pax Britannica” opened a maritime world analogous to the 20th century’s post-Cold War era, marked by rapidly rising trade. Naval missions became more elective, in support of a second colonial wave throughout the 1800s. The rules-based order behind this globalisation was heavily British in design and benefit, but not exclusively, with France another key influence.⁹ Simultaneously, after 1815 naval goals became nuanced, political and sometimes controversial, anticipating the need to create what we now term “rules of engagement”. At Navarino in 1827, a British, French and Russian fleet sent to embargo weapons’ shipments instead defeated a weaker Ottoman Turk and Egyptian force during the Greek War of Independence. London, however, then repudiated its own victorious Vice Admiral Sir Edward Codrington for easing Russian entry into the Balkans, despite domestic popularity for ending Ottoman control in southern Greece.¹⁰

After 1815 local multinational efforts arose to protect seagoing commerce using small forces. For example, British and American crews togeth-

7 Julian S. Corbett, *England in the Seven Years War: A Study in British Combined Strategy* (London: Folio Society, 2001), 437, and especially 321 for British operational ship-to-shore manoeuvre during the Quebec campaign.

8 Palmer, 202–207.

9 Rebecca Berens Matzke, *Deterrence Through Strength: British Naval Power and Foreign Policy under Pax Britannica* (Lincoln: Nebraska, 2011), 58–63.

10 Palmer, 208, Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (London: Ashfield, 1983), 167 and Lance E. Davis and Stanley Engerman, *Naval Blockades in Peace and War: An Economic History Since 1750* (Cambridge: Cambridge, 2006), 389.

er fought Caribbean piracy during the 1820s, predicting similar missions almost 200 years later.¹¹ Legal stability at sea grew as the new maritime order saw much of the world depart from mercantilism, heading to freer trade and conflict management backed by intimidation, and employing what would now be termed the globe's "oceanic commons".¹²

Maritime vastness meant all illicit trade could not be stopped, with West African anti-slavery patrols by the Royal and United States Navies made less effective by the rules-based order. Royal Navy crews discovered slavers had hoisted American flags to prevent their vessels from being searched, while the Americans could similarly not inspect Spanish-flagged vessels.¹³ Despite these legalities, using warships meant slave trade sanctions had at least some teeth. In parallel, Qing dynasty weakness created naval-led opportunities to coerce Imperial China's commercial exploitation. Britain, France and the United States used their sea and riverine power, especially steam gunboats, to force open trade with China for the three generations following the Second Opium War.¹⁴

The Crimean War produced Europe's first great power conflict in 40 years, albeit for limited goals. Naval rivals England and France used fleets to fight Russia in unforeseen ways. The Russians stayed in port, while coalition and joint command was split in four, according to nation and service, creating an unwieldy war by committee.¹⁵ French Army influence turned both fleets into tactical support for the Sevastopol siege, making

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- 11 Benjamin Armstrong, *Small Boats and Daring Men: Maritime Raiding, Irregular Warfare, and the Early American Navy* (Norman, OK: Oklahoma, 2020), 143–146. For a contrarian view of counter-piracy, see Guy Chet, *The Ocean is a Wilderness: Atlantic Piracy and the Limits of State Authority, 1688–1856* (Amherst: Massachusetts, 2014).
 - 12 Jonathan Caverley and Sara McLaughlin Mitchell, "A Liberal case for Seapower?" *War on the Rocks* (25 February 2021), at <https://warontherocks.com/2021/02/a-liberal-case-for-seapower>.
 - 13 W.E.B. Dubois, *The Suppression of the African Slave Trade to the United States of America 1638–1870* (New York: Longmans Green: 1896), 129, at https://www.gutenberg.org/files/17700/17700-h/17700-h.htm#Chapter_VIII, "Anti-slavery Operations of the US Navy," <https://www.history.navy.mil/research/library/exhibits/anti-slavery-operations-of-the-us-navy.html> and Andrew Gordon, *The Rules of the Game* (Annapolis: Naval Institute, 1996), 162–163. Kennedy, 165, notes the RN squadron counted 32 warships off Africa in 1847; the USN used two to four.
 - 14 Matzke, 142–146, Kennedy, 166–167. See also Bernard D. Cole, *Gunboats and Marines: The United States Navy in China, 1925–1928* (Wilmington: Delaware, 1982).
 - 15 Andrew Lambert, "Arms Races and Cooperation: The Anglo-French Crimean War Coalition, 1854–1856," in Niels Bo Poulsen *et al.* (eds.), *Coalition Warfare: An*

them ineffective during the failed attack on the city on 17 October 1854. Naval misuse prevailed into 1855, when General François de Canrobert recalled a sea raid on Kerch. His successor, General Aimable Pélissier, later launched that attack, opening the Sea of Azov to allied warships which ruined Russian logistics, ultimately starving Sevastopol.¹⁶ At least the coalition navies moved troops to Crimea and delivered supplies ashore to them.

Surprisingly, the Crimean War coalition hardly used its preeminence at sea to attack Russia's Baltic positions. Political concerns about Swedish intervention constrained fleet use, leading one contemporary British magazine to satirise naval efforts as:

What is the difference between the fleet in the Baltic and the fleet in the Black Sea? The fleet in the Baltic was expected to do everything and it did nothing; the fleet in the Black Sea was expected to do nothing and did it.¹⁷

Just as in the Black Sea, joint and combined command disputes slowed decisions. Still, Anglo-French power dominated the Baltic, raided Russian ports and landed siege artillery and troops to take the Åland Islands.¹⁸ Action stopped with the coalition's bombardment and wrecking of the Sveaborg (Finland's Suomenlinna) fort in August 1855; the war ended in March 1856. Despite squabbles, and while not decisive, the threat posed by allied navies had tied in place over 30% of the Russian Army deployed to defend the Baltic coast, especially at Kronstadt.¹⁹

The First World War saw British, French and Italian fleets divide responsibility for Europe's periphery. Despite steamships and early radio, environmental limits on command and control cut the opportunities for co-operation at this scale.²⁰ An exception was the Pacific, as mixed warship groups, including from Japan and Australia, hunted for the German East

Anthology of Scholarly Presentations at the Conference on Coalition Warfare at the Royal Danish Defence College, 2011 (Newcastle: Cambridge Scholars, 2013), 102–105.

16 Lambert, 108–109.

17 *Punch* quoted in Kennedy, 174. See also Terrence Poulos, "The Baltic Gambit: The Royal Navy, Strategy, and Seapower in the Crimean War," unpublished paper (Univ. of Chicago, June 1987), 2, copy in author's possession.

18 Poulos, 21, 25–31.

19 Lambert, 111 and Poulos, 61–65.

20 Points acutely made in James Goldrick, *Before Jutland: The Naval War in Northern European Waters, August 1914–February 1915* (Annapolis: Naval Institute, 2015), 3, and Gordon, *Rules*, 354–356.

Asian Cruiser squadron.²¹ Tactically, from 1914 English submarines aided Russia in the Baltic and Black Seas, creating consternation but having little lasting effect. Imperial Germany did likewise, sending U-boats to reinforce the Ottomans in the Black Sea and Austria-Hungary in the Adriatic.²² Most notably, a 1915 Anglo-French joint force tried to open the Dardanelles. While conceptually promising, a lack of preparation and the committing of limited resources to pry open the Turkish straits disregarded the complex end the Entente sought.²³ Its costly failure soured many nations' view of the potential of amphibious action for a generation.

The World War's latter half saw more tangible joint and combined successes. In October 1917, a German amphibious descent on Russia's Baltic islands, Operation Albion, leveraged much of the High Seas Fleet to pressure the Petrograd government.²⁴ Elsewhere, German submarine attacks on merchant shipping forced the use of convoys, creating a shortage of escort warships. The Imperial Japanese Navy stepped into the gap in April 1917, committing 14 destroyers to shepherd Mediterranean convoys, scheduled by Britain.²⁵ The newly co-belligerent United States sent destroyers to Ireland the next month, also under British command and receiving Royal Navy antisubmarine warfare training. American battleships joined the Grand Fleet as the Sixth Battleship Squadron, too, in November 1917. Commanders of both American units fashioned good personal relationships with their British counterparts, which constituted the human

21 David Stevens, *In All Respects Ready: Australia's Navy in World War One* (Melbourne: Oxford, 2014), 49, and Paul G. Halpern, *A Naval History of World War I* (Annapolis: Naval Institute, 1994), 89–90.

22 Halpern, 187–190, 199–205, 233 and Goldrick, *Before*, 224–228.

23 Nicholas Lambert, *The War Lords and the Gallipoli Disaster: How Globalized Trade Led Britain to Its Worst Defeat of the First World War* (Oxford: Oxford, 2021), 197–198, Nicholas Lambert, *Planning Armageddon: British Economic Warfare and the First World War* (Cambridge: Harvard, 2012), 315–322, and Andrew Lambert, “The German North Sea Islands, the Kiel Canal and the Danish Narrows,” in Michael Epkenhans and Gerhard Groß (eds.), *The Danish Straits and German Naval Power 1905–1918* (Potsdam: Militärgeschichtliches Forschungsamt, 2010), 58–59.

24 Michael B. Barrett, *Operation Albion: The German Conquest of the Baltic Islands* (Bloomington: Indiana, 2008) and James Goldrick, *After Jutland: The Naval War in Northern European Waters, June 1916–November 1918* (Annapolis: Naval Institute, 2018), 188–203.

25 Halpern, 393.

side of the coalition.²⁶ Combined naval operations had thus begun to assume a more modern nature.

After 1918 the wartime maritime coalition faded, with countries instead vying for position. Partly cooperating during the Russian Civil War, and the Balkan settling of accounts, navies resumed work in national terms. Exceptions included evacuating hundreds of thousands of civilians, delivering food aid, dealing with maritime safety and some support for the new Baltic states.²⁷ Likewise, at the end of the 1930s, British and French fleets tried to enforce maritime non-intervention during the Spanish Civil War. Fascist Italian and National Socialist German ships completely evaded the embargo to support Francisco Franco, even using submarines to attack merchant ships, as the Soviet Union supported the Republicans.²⁸ While a contemporary author labelled the British as “Naval Pimpernels” for rescuing civilian innocents from shore cities, a mission also conducted by the US Navy’s Squadron 40-T showed that state interests predominated.²⁹

The Second World War opened with France and Britain predominant at sea. Despite that strength, which allowed them to sink many *Kriegsmarine* ships, they could not prevent the German sea and air invasion of neutral Norway in April 1940.³⁰ The subsequent fall of France, and Italy joining the Axis, reset the maritime balance. Italo-German Atlantic cooperation stayed limited to parallel submarine operations against Allied shipping, with several dozen Italian boats joining the Battle of the Atlantic, but not

26 Halpern, 359 and William N. Still, *Crisis at Sea: The United States Navy in European Waters in World War I* (Gainesville: Florida, 2004), 332–336 and 144 and Goldrick, *After Jutland*, 161–163 and 226–229. Commander Joseph Taussig, the USN destroyers’ commander, personally knew Admiral John Jellicoe, First Sea Lord, both having been wounded on the same day fighting in the 1900 Boxer Rebellion, in China.

27 William N. Still, *Victory Without Peace: The United States Navy in European Waters 1919–1924* (Annapolis: Naval Institute, 2018), 104–106, 146, 162–164, 176–177, 197–201, 227–229 and Stephen W. Roskill, *Naval Policy Between the Wars. Vol. I: The Period of Anglo-American Antagonism, 1919–1929* (London: Collins, 1968), 141–143, 196.

28 Stephen W. Roskill, *Naval Policy Between the Wars. Vol. II: The Period of Reluctant Rearmament* (London: Collins, 1976), 372–376, 385, 388–390.

29 Kenneth Edwards, *The Grey Diplomats* (London: Rich and Cowan, 1938), 242 and Willard Frank, “International Efforts to Contain the Spanish Civil War, 1936–1939” Canadian Commission on Military History (ed.), *Maintien de la Paix de 1815 à Aujourd’hui/Peacekeeping 1815 to Today* (Québec: CCMH, 1995), 184–197.

30 Keith Bird, *Erich Raeder: Admiral of the Third Reich* (Annapolis: Naval Institute, 2006), 145–148.

joining in group operations, the famous “Wolf Packs”. In the Mediterranean, 68 U-boats reinforced the *Regia Marina*, achieving some success but at the ultimate cost of all the craft committed.³¹ Both nations operated a few submarines out of Penang, in current-day Malaysia, raiding Allied Indian Ocean shipping to support Imperial Japan.³²

Axis subsurface threats drove the development of an Allied combined solution. Strategic coordination started in late 1941, as President Franklin Roosevelt ordered the US Navy to escort convoys halfway across the Atlantic, despite America still being neutral, then hand them over for protection by the Royal and Royal Canadian Navies.³³ The step meant that even before the Pearl Harbor attack a combined convoy system, and tactics to manoeuvre and defend dozens of merchant ships, including use of air power, started developing for the Battle of the Atlantic. Shared methods soon extended to the Mediterranean, Caribbean and Arctic theatres.

Crucially, the Atlantic campaign laid the multinational groundwork and familiarity which created the trust needed among the Allies for them to conduct complex amphibious landings in Europe, especially in France. Without the Allies coordinating their resources, the price of failure could have been heavy: before the Normandy invasion, during combined Exercise Tiger in late April 1944, at Slapton Sands, German torpedo boats sank two American landing ships, killing 700 soldiers.³⁴ For Pacific amphibious warfare advocates, the US Marine Corps needed to work out joint operations with the US Navy, especially on ship-to-shore movement and com-

31 For the BETASOM (Bordeaux Sommergibile) flotilla's success in early 1942, see Clay Blair, *Hitler's U-boat War: The Hunters, 1939–1942* (New York: Random House, 1996), 508. On Mediterranean losses, see Blair, *Hitler's U-boat War: The Hunted, 1942–1945* (New York: Random House, 1997), Appendix 7, 788–790. See also Bird, 169.

32 Jan Asmussen, “Amidst Abyss and Paradise—Germany's War in East Asia,” in Jarosław Suchoples *et al.* (eds.), *World War II Re-explored. Some Millennium Studies in the History of the Global Conflict* (Berlin: Peter Lang, 2019), 285–318.

33 W.A.B. Douglas *et al.*, *No Higher Purpose: The Official Operational History of the Royal Canadian Navy in the Second World War, 1939–1943. Vol. II, Part 1* (St. Catharines: Vanwell, 2002), 172–174, 211–212.

34 *ibid.*, 278–279 and W.A.B. Douglas *et al.*, *A Blue Water Navy: The Official Operational History of the Royal Canadian Navy in the Second World War, 1943–1945. Vol. II, Part 2*. (St. Catharines: Vanwell, 2007), 185–186, 227 and Christopher D. Yung, *Gators of Neptune: Naval Amphibious Planning for the Normandy Invasion* (Annapolis: Naval Institute, 2006), 91–93, 158–160.

mand relationships. The November 1943 bloodletting at Tarawa showed the wide seam between the two services, which was resolved thereafter.³⁵

Defensive joint naval support deserves note. Starting in Norway, most notably at Dunkirk, and through the Greek, Crete and Dodecanese campaigns, Allied naval power repeatedly rescued endangered ground forces. Notably, the Axis did the same: in early 1943 the Imperial Japanese Navy pulled out much of the Guadalcanal garrison, as did the Germans and Italians from Sicily later that year.³⁶ German and Rumanian troops enjoyed similar maritime rescues in late 1943 from the Caucasus and, less successfully, in 1944 from Crimea, while Nazi Germany's 1945 Baltic withdrawals represented the largest evacuation any service was able to do. In most of these withdrawals, success came despite facing stronger air or naval power.

In the Pacific, Allied combined operations experienced a rough passage. ABDACOM, American-British-Dutch-Australian Command, headed by a British field marshal, in February 1942 tried to halt Japan's drive on Indonesia. Harshly confirming command and control's centrality, the combined flotilla disastrously mixed three different sets of tactics, in two languages.³⁷ Led by Royal Netherlands Navy Admiral Karel Doorman, and holding both a defensive advantage and near equal numbers, the Allies were largely destroyed by Japanese ships at negligible cost during the Battles of the Java Sea and Sunda Strait. Six months later a mixed US–Australian force, commanded by a Royal Navy rear admiral, received a similar drubbing at Savo Island.³⁸ The painful lessons of these actions, shared amongst the Allies, built impetus for their ultimate success in 1945. They also put in place the foundations for shared and long-term joint amphibious practices honed in the central and south-western Pacific.

35 George C. Dyer, *The Amphibians Came to Conquer: The Story of Admiral Richmond Kelly Turner* (Washington: Naval History Division, 1969), 686–700.

36 Derived from Sarandis Papadopoulos, "An inferior naval power ashore: German Navy Baltic, Mediterranean and Black Sea Operations," in David Stevens and John Reeve (eds.), *Sea Power Ashore and in the Air* (Sydney: Halstead, 2007), 92–105.

37 Samuel E. Morison, *History of United States Naval Operations in World War II. Vol. 3: The Rising Sun in the Pacific, 1931–April 1942* (New York: Little Brown, 1948), 342–343, and War History Office of the National Defense College of Japan (Willem Rummelink, ed. and trans.), *The Operations of the Navy in the Dutch East Indies and the Bay of Bengal* (Leiden: Leiden, 2018), 412–414, 435–457.

38 Trent Hone, *Learning War: The Evolution of Fighting Doctrine in the U.S. Navy, 1898–1945* (Annapolis: Naval Institute, 2018), 174–179.

The early Cold War saw something new: peacetime interest in combined naval efforts, first among English-speaking allies, then for NATO, Australia, New Zealand and Japan. Preparing for antisubmarine warfare, now to resist the Soviet Navy, created the push for the approach.³⁹ Despite politically untenable attempts to split defence production by adopting homogeneous equipment, shared command and control measures bridged the fleets instead. By 1952, the manual *ATP 1: Allied Naval Maneuvering Instructions* began teaching English-speakers the necessary tactics, which were soon translated with supporting communication rules and standardisation agreements. Reinforced by officer school exchanges and large exercises (“Mainbrace” off Norway in 1952 involved 200 ships, 1,000 airplanes and 80,000 people), the “interoperable” maritime alliance was put in place. Korean War combat, including three nations’ warships at the Inchon amphibious landings in September 1950, was its first combat test.⁴⁰ Use of NATO’s maritime doctrine started spreading across the globe.

Still, there was much room for friction. In November 1956, a British and French fleet amphibiously attacked Gamel Abdul Nasser’s Egypt during the Suez Crisis. The event saw use of naval weapons constricted by rules of engagement, the US Sixth Fleet unsupportive and a shared former colony of Canada fostering a United Nations’ ceasefire and allied withdrawal.⁴¹ Likewise, command of nuclear weapons, treated nationally by the British, French and United States, became divisive, although compromises arose. As a NATO demonstration, the destroyer USS *Claude V. Ricketts*, captained and half-crewed by Americans, sidestepped the command issues and filled out its complement with West German, Hellenic,

39 Corbin Williamson, *The U.S. Navy and Its Cold War Alliances, 1945–1953* (Lawrence: Kansas, 2020), Ch. 5, and Peter T. Haydon, “A Tale of Two Navies: Building the Canada-U.S. Cold War Naval Relationship” in *Canadian Military History* vol. 23: 3 & 4 (Summer/Autumn 2014), 176–194.

40 *ibid.*, 186–197 and Ch. 7, Anselm van der Peet, *Out of Area: de Koninklijke Marine en multinational vlootoperaties 1945–2001* (Franeker: Van Wijnen, 2016), 534, Sean Maloney, *Securing Command of the Sea: NATO Naval Planning, 1948–1954* (Annapolis: Naval Institute, 1995), 153–156 and Curtis Utz, *Assault from the Sea: The Amphibious Landing at Inchon* (Washington: Naval Historical Center, 1994), 14, at <https://www.history.navy.mil/content/history/nhhc/research/publications/publications-by-subject/inchon.html>.

41 Eric Grove, *Vanguard to Trident: British Naval Policy Since World War Two* (Annapolis: Naval Institute, 1987), 183–195 and Stephen Prince, “The Post-Imperial Relationship with the Royal Navy: On the Beach?” *Canadian Military History* vol. 23: 3 & 4 (Summer/Autumn 2014), 308.

Italian, Royal Netherlands, Royal and Turkish Navy officers and sailors.⁴² A complete success in naval terms, the experiment did not resolve nuclear command divisions. Tactical and operational solutions, valuable in themselves, are no substitute for strategic cohesion.⁴³

Given national command differences, NATO began deploying a group of a half-dozen escorts, with an oiler, named Standing Naval Force Atlantic—STANAVFORLANT from 1968. It is hard to overstate the impact of Standing Naval Forces upon the tactics and, vitally, the minds of allied sea service members.⁴⁴ Reporting to the Supreme Allied Commander, Atlantic in Norfolk, a US admiral, each captain in the squadron led the force in rotation. Embodying the American-created and NATO-accepted “flexible response” doctrine, STANAVFORLANT was, and under a new name still is, a familiarisation and training unit in peacetime, a crisis response force and a capable armed multinational convoy escort in case of war.⁴⁵ A Mediterranean version started in 1969, was formalised in 1992 and, with two mine warfare units, continues to work in parallel. Above all, through it “procedural interoperability has engendered a *cultural* interoperability of unstated but no less strong mutual understanding that guides how one does business during coalition warfare”.⁴⁶ Backed by wider exchanges of people and shared schools, NATO ship crews have served together, know-

42 Andrew Priest, “‘In Common Cause’: The NATO Multilateral Force and the Mixed-Manning Demonstration on the USS *Claude V. Ricketts*, 1964–1965” *Journal of Military History* 69: 3 (July 2005), 759–789 and Marco V. Kölln, “Marine und Multinationalität: Das Experiment Claude V.(Vernon) Ricketts” in *Die Marine im Kalten Krieg 1956–1968* (Rostock: 37. Historisch-Taktische Tagung der Flotte, 1997), 125–143.

43 On a late 1960s’ exercise which temporarily bridged NATO allies Greece and Turkey, see Sarandis Papadopoulos, “Partnership—Horacio Rivero, Jr. (1910–2000),” in John B. Hattendorf and Bruce A. Elleman (eds.) *Nineteen-Gun Salute: Case Studies of Operational, Strategic, and Diplomatic Naval Leadership During the 20th and Early 21st Centuries* (Newport: Naval War College, 2010), 152–153.

44 John B. Hattendorf, “NATO’s Policeman on the Beat: The First Twenty Years of the Standing Naval Force, Atlantic, 1968–1988,” in John B. Hattendorf, *Naval History and Maritime Strategy* (Malabar: Krieger, 2000) and Nicholas Tracy, *A Two-Edged Sword: The Navy as an Instrument of Canadian Foreign Policy* (Montreal and Kingston: McGill-Queens, 2012), 154–155.

45 Grove, 296.

46 Eric Lerhe, *At What Cost Sovereignty? Canada–US Military Interoperability in the War on Terror* (Halifax: Dalhousie, 2013), 5. In 2005 renamed Standing NATO Maritime Groups (SNMG) 1 (former STANAVFORLANT) and 2 (STANAVFORMED), and Standing NATO Mine Countermeasures Groups (SNMCMG) 1 and 2.

ing and trusting one another through these formations for nearly two generations.

The mid-Cold War extended multinational sharing to the Pacific. Held since 1971, starting with the Royal Australian, Canadian, United States and Royal Navies, the Rim of the Pacific (RIMPAC) exercise reinforced expertise and built familiarity.⁴⁷ Conducted biennially near Hawai'i, it addressed the Soviet threat, with NATO procedures imported for Pacific use. Japan's Maritime Self-Defense Force (JMSDF) joined in 1980, affording those crews the chance to work with navies beyond their ally, the United States. Over time, participating ship and aircraft crews made the same efforts as their Atlantic counterparts.⁴⁸ Other nations have joined in, briefly including the People's Liberation Army Navy in the 21st century. As a measure of its value, one Australian officer described his service as making a "regular pilgrimage" to RIMPAC, a sentiment also reflected in the JMSDF's promotion of former exercise participants to the rank of admiral.⁴⁹

Cold War actions in the Atlantic theatre confirmed and reinforced the utility of multinational operations. Perhaps the most robust exercise, Northern Wedding held every four years off Scandinavia, demonstrated different nations' fighting skill, while simultaneously testing concepts for evading Soviet naval and air power.⁵⁰ Letting the allies share knowledge of their capabilities for great power competition with one another built confidence in NATO's deterrent strength. Behind the scenes, cooperation also grew as British and American submariners carefully shared their under-

47 In 1959 the UNITAS Exercise also started with South and North American naval participation. To the best of the author's knowledge, there have been no combined operations that have exploited these relationships.

48 Richard Hunt and Robert Girrier, "RIMPAC Builds Partnerships that Last" *Proceedings* vol. 137: 10 (October 2011), 76–77, Alessio Patalano, *Post-war Japan as a Sea Power: Imperial Legacy, Wartime Experience and the Making of a Navy* (London: Bloomsbury, 2015), 109, and Yōji Kōda, "From Alliance to Coalition, then Where? Japan and the US Navy Cooperative Strategy for the Twenty-First Century," in Alessio Patalano (ed.), *Maritime Strategy and National Security in Japan and Britain* (Leiden: Global Oriental, 2012), 211 and Narushige Michishita *et al.*, *Lessons of the Cold War in the Pacific: U.S. Maritime Strategy, Crisis Prevention, and Japan's Role* (Washington: Wilson Center, 2015).

49 Jack McCaffrie, "The RAN and Australia's maritime security: options for the future," in David Stevens (ed.), *Maritime Power in the 20th Century: The Australian Experience* (St. Leonards: Allen & Unwin, 1998), 267 and Patalano, *Post-war*, 129.

50 John F. Lehman, *Oceans Ventured: Winning the Cold War at Sea* (New York: W.W. Norton 2018), Ch. 6, and Eric Grove, *Battle for the Fiords: NATO's Forward Maritime Strategy in Action* (Annapolis: Naval Institute, 1991).

standing of Soviet subsurface forces and tactics. In particular, the willingness of these crews to get “up close and personal” displayed mutual professionalism and trust in one another.⁵¹ Truly global maritime pressure helped deter the Soviet Union at sea.

The end of the Cold War changed the maritime balance again, with navies free to police the ocean commons, rather than readying themselves for great power competition. With the leading alliance and subsequent broader coalitions holding preponderant naval power, multilateral efforts accelerated, usually under United Nations (UN) authority. The first such effort enforced arms and oil sanctions against Iraq following Saddam Hussein’s 1990 invasion of Kuwait. National rules of engagement, and limits of proprietary intelligence information, complicated the stopping and searching of ships trying to run the embargo.⁵² Despite the wear and tear of organising that embargo, it was to last until 2003. During Desert Storm, sanctions’ enforcement worked alongside the coalition’s aircraft carrier, naval gunfire and minesweeping efforts against Iraq.⁵³

In Europe, but “out-of-area” for NATO, Maritime Interception (or Interdiction) Operations (MIO) strove to manage the former Yugoslavia’s civil war by blocking arms and fuel shipments. Ultimately named Sharp Guard, roughly a dozen ships plus aircraft continuously and laboriously tracked and sometimes questioned over 70,000 Adriatic ships over a 43-month period.⁵⁴ NATO’s Link-11 system helped share allied operational data and the latest version of *ATP-1* guided manoeuvring.⁵⁵ Given there were capable Serbian submarines and short-range missiles on the coast, crews needed to remain alert to any escalation. The mission also took on nuance, for po-

51 Peter Hennessy and James Jinks, *The Silent Deep: The Royal Navy Submarine Service Since 1945* (London: Penguin, 2016), Ch. 9.

52 See Oct. 1990 Iraqi merchant ship *Al Wasitti* in Jeffrey G. Barlow, “U.S. Navy’s Role in Maritime Interception Operations in the Arabian Gulf Region, 1991–2001,” in Weir and Doyle, 29–30. For their legal frame see W. Heintschel von Heinegg (ed.) *Visit, Search, Diversion and Capture: The Effect of the United Nations Charter on the Law of Naval Warfare* (Bochum: Brockmeyer, 1995), 47, and Comment No.7 in *ibid.* by Heinz Dieter Jopp, 115–116.

53 Edward Marolda and Robert Schneller, *Shield and Sword: The United States Navy and the Persian Gulf War* (Washington: Naval Historical Center, 1998) and Anselm van der Peet, *Out of Area: de Koninklijke Marine en multinationale vlootoperaties 1945–2001* (Wijnen: Uitgeverij Van, 2016).

54 Stephen Prince and Kate Brett, “Royal Navy Operations off the Former Yugoslavia: Operation Sharp Guard, 1991–1996” and Sarandis Papadopoulos, “The U.S. Navy’s Contribution to Operation Sharp Guard,” in Weir and Doyle, 45–99.

55 Norman Friedman, *Network-Centric Warfare: How Navies Learned to Fight Smarter Through Three World Wars* (Annapolis: Naval Institute, 2009), 88–91.

litical limits meant some ships served under West European control, and as American policymakers debated whether to maintain the Balkans arms embargo or to arm the nascent state of Bosnia-Herzegovina instead.⁵⁶ Naval commanders learned to “loosely couple” their formations, informally brokering what each ship could and could not do.⁵⁷ Over time, Sharp Guard became joint, as UN peacekeepers inside the former Yugoslavia requested support. In response, naval air units took part in Operation Deliberate Force, which in May 1995 began targeting Serbian indirect fire weapons, prior to the arrival of NATO peacekeepers, the Implementation Force.⁵⁸

In September 1999, the Pacific also saw a large combined and joint mission under UN auspices. Responding to ethnic and religious threats to the people of East Timor, Australia led Operation Stabilise to land a reinforced brigade of peacekeepers there, and for the next five months coalition ships supported it.⁵⁹ A total of 36 ships responded, including the American cruiser USS *Mobile Bay* and the supply ship USNS *Kilauea*. Sailing to join Stabilise after the bilateral Australian–American Crocodile ’99 exercise, their crews knew and fitted seamlessly into the Australian command and control structure, which again employed Link 11 to manage information.⁶⁰ Given East Timor’s isolation and poor infrastructure ashore, which forced the use of fuel-hungry helicopters, the broad coalition provided essential oilers—including the Canadian HMCS *Protecteur*, a long way from home—to deliver vital supplies.

The attacks on 11 September 2001 prompted a robust UN and NATO response at sea, the latter for the first time invoking its mutual defence obligation. Under Operation Enduring Freedom, both sought to deny Al Qaeda use of the open ocean to move people, under the rubric of Leadership Interdiction Operations, as well as to support operations ashore in

56 Peter T. Haydon, “Naval Peacekeeping: Multinational Considerations” in Peter T. Haydon, *Navies in the Post-Cold War Era* (Halifax: Center for Foreign Policy Studies, 1998), 61–62.

57 Mark D. Mandeles, *The Future of War: Organizations as Weapons* (Dulles, VA: Potomac, 2005), 150–153.

58 Prince and Brett, 69–70.

59 David Stevens, “The Combined Naval Role in East Timor” and Sarandis Papadopoulos, “A Limited Commitment to Ending Civil Strife: The U.S. Navy in Operation Stabilise,” in Weir and Doyle, 101–165.

60 *ibid.*, 119 & 156. On Link 11 see Stephanie Hsieh *et al.*, *Networking the Global Maritime Partnership* (Canberra: Sea Power Centre, 2014), 17–18.

Afghanistan.⁶¹ A subsidiary effort, the US-sponsored Proliferation Security Initiative, also sought to prevent smuggling of technology, from North Korea and Iran, of weapons of mass destruction or their component parts.⁶² Reliant upon cooperative policies from participants, and highly demanding upon ships' crews, these tactics finalised methods for tackling the terrorist threat in a multidimensional way.

Over time and as in previous missions, strategic divergences split allies, with Turkey refusing to join in the 2003 invasion of Iraq, forcing maritime redeployment of the US Army 4th Infantry Division through the Arabian Gulf. Canada, for internal political reasons, chose not to participate either.⁶³ Throughout the combined and joint preparations for Operation Iraqi Freedom, and during the initial attack itself, Canadian Navy ships remained in the Arabian Gulf, bore their existing responsibilities and led Task Force 151, which was made up largely of states not part of the invading force. Two months later, the Canadians resumed pre-Iraq invasion information-sharing, as US ships rejoined the task force under multinational command.⁶⁴ While allies and coalition partners will neither join every mission, nor commit forces of the same size as larger services, they do garner respect by showing professional competence.⁶⁵ Few better indications showing durable trust at sea have arisen.

Other opportunities for maritime cooperation arose during humanitarian crises. Following a massive earthquake in December 2004 and resulting tsunamis across the Indian Ocean, coastal states desperately needed supplies delivered by sea. In response, dozens of warships from the region and beyond provided water, food and medical supplies, which were brought by sea and often made the last leg of the trip by shipborne helicopter to by-

61 Jeffrey G. Barlow, "The U.S. Navy's Role in Coalition Maritime Interception in Operation Enduring Freedom, 2001–2002" and Robert H. Caldwell, "The Canadian Navy, Interoperability, and U.S. Navy-Led Operations in the Gulf Region from the First Gulf War to 2003," both in Weir and Doyle, 167 & 219, van der Peet, 532–533, and John Patch, "Maritime Interception Operations: Worth the Effort," in Sam J. Tangredi (ed.) *The U.S. Naval Institute on Naval Cooperation* (Annapolis: Naval Institute, 2015), 152–156.

62 Simon Reich and Peter Dombrowski, *The End of Grand Strategy: US Maritime Operations in the 21st Century* (Ithaca: Cornell, 2017), 110–112.

63 Tracy, 269–270.

64 Caldwell, 250–252 and Lerhe, 260, 267.

65 van der Peet, 536.

pass washed-out roads and bridges.⁶⁶ Shortly thereafter, the devastation caused by Hurricane Katrina likewise made the Gulf of Mexico coast of the United States the recipient of assisting ships from Canada, Mexico and the Netherlands, as well as 14 from the US Navy.⁶⁷ Similar naval responses occurred following earthquakes hitting Haiti in 2010 and Japan in 2011.⁶⁸

During the 21st century maritime operations unfolded, or reemerged, to challenge navies. The Arab Spring starting in 2011 unevenly instigated political change, with Libya's civil war an early focus. Under UN Security Council authorisation, over 40 warships (initially from two NATO standing maritime groups) staged two missions, the first coalition-run, the second an Alliance event. These forces began by eliminating the Libyan air defence system, and air units created a no-fly zone, which they then reinforced through an arms embargo, while protecting civilians on shore.⁶⁹ Revolutions from Tunisia to Iraq also widely opened the floodgates for refugees to flow to Europe, creating opportunities for criminal human trafficking and abuse. The volume of seagoing migrants defied political solution, driving European Union maritime forces to reuse now-familiar Maritime Interception techniques for Operation Sophia, in this case stepping in to preserve human lives at sea for over five years.⁷⁰

Similarly, Indian Ocean criminality, rooted both in illegal fishing and instability ashore, transformed an Enduring Freedom operating unit, Task Force 151, into a seagoing counter-piracy mission now in its thirteenth

66 Larissa Forster, *Influence Without Boots on the Ground: Seaborne Crisis Response. Naval War College Newport Papers* 39 (Newport: Naval War College Press, 2013), at <https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1038&context=usnwc-newport-papers>, and Bruce Elleman, *Waves of Hope: The U.S. Navy's Response to the Tsunami in Northern Indonesia. Naval War College Newport Papers* 28 (Newport: Naval War College Press, 2007), at <https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1029&context=usnwc-newport-papers>.

67 Brian Walsh, *Support to the Hurricane Katrina Response by the Joint Force Maritime Component Commander: Reconstruction and Issues* (Alexandria: Center for Naval Analyses, 2006), 81–87 at https://www.cna.org/CNA_files/PDF/D0013414.A4.pdf.

68 See Forster, Appendix A.

69 Christopher S. Chivvis, “Strategic and Political Overview of the Intervention,” Deborah C. Kidwell, “The U.S. Experience: Operational” and Christina Goulter, “The British Experience: Operation Ellamy” in Karl P. Mueller (ed.), *Precision and Purpose: Airpower in the Libyan Civil War* (Santa Monica: RAND, 2015), 21–29, 123 and 158–159 at https://www.rand.org/content/dam/rand/pubs/research_reports/RR600/RR676/RAND_RR676.pdf and “Daily NATO Operation Unified Protector summaries,” at https://www.nato.int/cps/en/natolive/news_71994.htm.

70 EUNAVFORMED “Operation Sophia,” at https://www.operationsophia.eu/about-us/#chain_of_command.

year.⁷¹ Under the European Union name of “Atalanta” and authorised by the UN, warships serve as escorts to maintain the commercial seagoing traffic flow off East Africa, with command of the task force rotating through contributing nations and using techniques descended from *ATP-1*. Better allied navies added flexibility to the escorts’ responses, as their national rules of engagement can prove robust.⁷² Practice begun during the Cold War and developed into durable knowledge in the Arabian Gulf and Adriatic are the skills needed for these missions.

Written by a historian, the preceding list of combined and joint naval missions may seem encyclopaedic, even formless, and of little utility to either analysts or naval leaders. Nonetheless, some generalisations apply. First, across time individual national policies shaped when and how each country’s vessels and crews worked together. As sovereign territory, warships can only do what their political leaders allow: Vice Admiral Codrington at Navarino, nearly two centuries ago, shows us the professional penalty for disobeying what policymakers require. The rules-based maritime order matters, but an individual country’s politicians must decide when and how their armed services will fight. It also bears noting that political goals will change, sometimes quickly. Sensitivity to such constraints among ship captains and the admirals who lead them is, therefore, proper.

Second, given the Earth’s vast oceans, coordinated multinational operations before 1920 were difficult, with wind power making combined age-of-sail battles rare. The much broader combined and joint actions of the steam, radio, submarine and aircraft era became possible through enabling technology, although working through strategic-level constraints still needed extensive advance preparation. The testing ground for such approaches became the Second World War’s Battle of the Atlantic, which was essential to an Allied victory and was broadened by amphibious warfare. Its Cold War successor, alliance antisubmarine warfare preparation,

71 Martin N. Murphy, *Small Boats Weak States Dirty Money: Piracy and Maritime Terrorism in the Modern World* (London: Hurst, 2008), and European Union Naval Force (Op Atalanta) Somalia, “Operation Atalanta,” at <https://eunavfor.eu/>. The example of suppressing South East Asian piracy is a useful context. See Ahmad Al-maududy Amri, “Piracy in Southeast Asia: An Overview of International and Regional Efforts” in *Cornell International Law Journal Online* (vol. 1) 2014, at <http://cornellilj.org/piracy-in-southeast-asia-an-overview/>.

72 European Union Naval Force (Op Atalanta) Somalia, “Operation Atalanta,” at <https://eunavfor.eu/> and Terry McKnight & Michael Hirsch, *Pirate Alley: Commanding Task Force 151 Off Somalia* (Annapolis: Naval Institute, 2012), 93–94.

cemented practices in place. It also bears noting that creating ways for ships to “plug and play”, or unplug when so ordered, is a perishable skill. Vice Admiral Andrew Lewis, USN, writing in early 2021, noted that NATO needs renewal; during the 1970s and the 1950s, his predecessors had said the same thing. Indeed, throughout the entire period examined here, “Interoperability has to be constantly re-brokered, and also marketed”, confirming the timelessness of the admiral’s words.⁷³

Most durably, these same recent admirals, captains and sailors have found ways to make their missions together work, by appreciating what their international colleagues brought to the table. The chief advantage of trustworthy allies and coalition partners is the willingness they bring to the table to share burdens. The above are case studies which historians and current-day analysts can explore further and use to understand the skills which crews and planners need by looking at the specific constraints on behaviour shown in each case. Successful work at sea demands professional respect formed over time. At the risk of repetition, multinational cooperation starts by developing trust: even professional discussions about manoeuvring ships before conducting a manoeuvre at a RIMPAC exercise can, for example, develop and demonstrate shared respect. Largely invisible outside navies, these capabilities are essential to continuing the international rules-based order at sea.

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73 Caldwell, in Weir and Doyle, 265 and Andrew Lewis, “Strengthen the Transatlantic Alliance,” in *Proceedings* 145: 3 (March 2021), 14–16.

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Section 2:

Prepare for What? Looking at Threats and Theatres

Facing Threats

Incognito Hybrid Threats: Avoiding the Alliance's Trident

Frank G. Hoffman

NATO is the world's foremost maritime alliance, and the foundations of that alliance, and the economic health and welfare of its members, are tied to the use of global commons and maritime resources more now than ever.¹ Those interests are being increasingly threatened by covert and indirect forms of aggression from so-called hybrid threats or what in the United States is more often described as “grey-zone” tactics.² These have been defined as actors “employing sequences of gradual steps to secure strategic leverage. The efforts remain below thresholds that would generate a powerful U.S. or international response, but nonetheless are forceful and deliberate, calculated to gain measurable traction over time”.³ These actions are described by some analysts as a novel form of conflict, and by others as classical “salami-slicing” strategies, fortified with a range of unconventional techniques—from cyberattacks to information campaigns to energy diplomacy. According to senior US officials, “The Gray Zone is characterized by intense political, economic, informational, and military competition more fervent in nature than normal steady-state diplomacy, yet short of conventional war”.⁴ Such conflicts “involve some aggression or use of force, but in many ways their defining characteristic is ambiguity—about the ultimate objectives, the participants, whether international

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- 1 Diego A. Ruiz Palmer, “A Maritime Renaissance”, in Joachim Krause and Sebastian Bruns, eds., *Routledge Handbook of Naval Strategy and Security* (Abingdon: Routledge, 2016), 364.
 - 2 Shota Gvineria, “Euro-Atlantic Security Before and After COVI-19”, *Journal of Baltic Security*, 6, No. 1 (2020), 1–17.
 - 3 On grey-zone concepts, see Michael Mazarr, “Mastering the Gray Zone: Understanding a Changing Era of Conflict”, Carlisle, PA: Strategic Studies Institute, December 2015. For a historical conception of the coercive use of force, see Barry Blechman and Stephen A. Kaplan, *Force Without War: U.S. Armed Forces as a Political Instrument* (Washington, DC: Brookings, 1978). This seminal work was recently updated in Melanie W. Sisson, James A. Siebens and Barry M. Blechman, eds., *Military Coercion and US Foreign Policy: The Use of Force Short of War* (Abingdon: Routledge, 2020).
 - 4 General Joseph L. Votel, statement before the House Armed Services Committee Subcommittee on Emerging Threats and Capabilities, 18 March, 2015.

treaties and norms have been violated, and the role that military forces should play in response.”⁵

Grey-zone tactics and hybrid warfare are an explicit discussion point at NATO and among civilian NATO leaders.⁶

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”.⁷ This depiction describes a combination of political and unconventional instruments of coercion and influence. These activities entail the coercive use of military force and more subtle forms of malign influence in the political and informational domain. As noted by a former commander of US European Command, the Kremlin’s hybrid methods combine an array of diplomatic, economic, information and security tools short of war with Moscow’s efforts to undercut the rules of international order.⁸

NATO’s interpretation of hybrid threats depicts them as a non-violent mixture of military means with non-military tools, including propaganda and cyber activity. This makes it comparable to grey-zone conflicts, and distinct from this author’s version of 2005–2007.⁹

In addition to NATO’s formal awareness, the relevance of the challenge was reinforced by the Strategic Reflection group, which noted the challenges in the future geostrategic environment, including:

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- 5 David Barno and Nora Bensahel, “Fighting and Winning in the ‘Gray Zone,’” *War on the Rocks*, 19 May, 2015.
 - 6 Anders Fogh Rasmussen, quoted in Mark Landler and Michael Gordon, “NATO Chief Warns of Duplicity by Putin on Ukraine”, *New York Times*, 8 July, 2014, A1.
 - 7 Wales NATO Summit Communiqué, 4 September, 2014. http://www.nato.int/cps/en/natohq/official_texts_112964.htm?selectedLocale=en.
 - 8 General Philip M. Breedlove, Testimony before the Senate Armed Services Committee, 1 March, 2016.
 - 9 On distinctions in different definitions, see Frank Hoffman, “Examining Complex Forms of Conflict, Gray Zone and Hybrid Challenges” *PRISM*, vol. 7, No. 4 (2018), 30–47. On continuity in Russia’s approach, see Michael Kofman and Matthew Rojansky. “A Closer Look at Russia’s Hybrid War”, *Kennan Cable No. 7*, Washington, DC: Woodrow Wilson Center, April, 2015; Keir Giles, “Russia’s ‘New’ Tools for Confronting the West: Continuity and Innovation in Moscow’s Exercise of Power”, (London: Chatham House, March 2016), 5.

- Both the main challenge of Russia and the emerging challenge of China;
- Incorporating combating terrorism in all its forms and manifestations more fully into the core tasks;
- Reflecting the increasing role of hybrid threats posed by NATO adversaries.¹⁰

While the group presented these as separate issues, they are all interrelated because Russian and China promote hybrid threats and have been doing so for years. Concerns about Russian coercion via grey-zone/hybrid tactics in Europe have forced NATO to improve the alliance's readiness for rapid response and reassurance measures designed to deter further incursions. However, NATO and other actors overlook the maritime dimension in the region while investing billions in deterring a direct conventional assault from Russia in a *coup de main*. The alliance lacks recognition of the maritime dimension of the challenge.¹¹ As noted by Magnus Nordenman, "The maritime domain is increasingly competitive and contested, and the return of geopolitical competition has important maritime dimensions".¹²

This chapter focuses on this maritime aspect of strategic competition and is structured in three sections. The foregoing first section introduced the topic of hybrid and grey-zone challenges. The *second* section is the body of the chapter and details past examples and possible future challenges presented by three state actors: Russia, Iran and China. The final section very briefly describes how this challenge will impact NATO's strategy and possibly its organisational approach. Other contributions in this volume address recommendations relevant to sharpening the trident of the alliance's potent maritime forces.

Russia

Russian preferences for indirect and ambiguous actions including Active Measures and disinformation operations easily fit within the concept of

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- 10 NATO 2030, *United for a New Era*, Strategic Reflection Group Report, Brussels: NATO, 25 November, 2020, accessed at 201201-Reflection-Group-Final-Report-Uni.pdf (nato.int).
 - 11 Franklin D. Kramer and Magnus Nordenman, "A Maritime Framework for the Baltic Sea Region", (Washington, DC: Atlantic Council, *Issue Paper*, March 2016).
 - 12 Magnus Nordenman, *The Naval Alliance: Preparing NATO for a Maritime Century*, (Washington, DC: The Atlantic Council, July 2015).

grey-zone activities. Some describe Russia's behaviour as reflecting an example of "hybrid warfare".¹³

Russian examples of grey-zone/hybrid threats include numerous uses of maritime assets. Regional experts have identified a number of maritime vulnerabilities.¹⁴ In October 2014, Sweden conducted a major hunt for a foreign submarine, suspected to be Russian, off the coast of Stockholm. The military subsequently confirmed "a mini submarine" had violated its territorial waters.¹⁵ In March 2015, Russia conducted exercises using a scenario in which it attacked the Swedish island of Gotland, the Danish island of Bornholm and the Finnish Åland Islands.¹⁶ These exercises have led to the exploration of ways to better defend those islands. In 2016, a Swedish naval exercise detected undersea activity as well. Violations of airspace in the region are almost a daily occurrence. In the same year, a Russian fighter provocatively "buzzed" the American destroyer USS *Donald Cook* at low altitude when it was operating in the Baltic Sea in April 2016.¹⁷

During the seizure of the Crimea, the Russian Navy supported the invasion by sinking two of their own ships to block the Ukrainian naval force in Sevastopol from exiting to the Black Sea. This, in effect, permitted the wholesale capture of a sizeable portion of Kyiv's navy. Menacing just outside the 'accidental' blockade was the lethal *Moskva* missile cruiser. Ukraine lost its naval headquarters and six combat ships.

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- 13 *Strategic Survey 2014, The Annual Review of World Affairs* (London: Institute for International Strategic Studies, 2014), 53–64; and "Hybrid Warfare: Challenge and Response", *Military Balance* (London: Institute for International Strategic Studies, 2015), 17–20.
 - 14 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), 11–19; Gary Schaub Jr., Martin Murphy and Frank Hoffman, "Hybrid Maritime Warfare: Building Baltic Resilience", *RUSI Journal*, 162, No. 1 (2017), 32–40.
 - 15 Peter Walker, "Sweden searches for suspected Russian submarine off Stockholm", *The Guardian*, 19 October, 2014. <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*, 29 September, 2015. <http://www.worldaffairsjournal.org/blog/elisabeth-braw/submarine-intruders-swe-den%E2%80%99s-coastline>.
 - 16 Wojciech Lorenz and Szymon Zareba, "Åland Islands' Significance to Security in the Baltic Sea Region", *Bulletin No. 72*, (Warsaw: Polish Institute of International Affairs, 7 November, 2016).
 - 17 Thomas Gibbons-Neuf, "A Strange Recent History of Russian Jets Buzzing Navy Ships", *Washington Post*, 14 April, 2016.

In another example, on 25 November 2019, Russia seized three Ukrainian naval vessels in the Kerch Strait off the coast of the Crimea, an operation carried out under the direction of the Federal Security Service. Russia used several coastguard ships to fire upon and board Kyiv's ships. The conventional component was supplied by a flight of menacing Su-25 fighters and Ka-52 combat helicopters overhead to enforce the blockade of the Kerch Strait leading into the Sea of Azov. There was little ambiguity in this case and certainly a degree of risk in escalation involved, but the air assets posted nearby were intimidating. Clearly this was more coercive than ambiguous.

As they have done in the Baltic region, the Russians have expressed their displeasure at the increased presence of US Navy ships through unprofessional and dangerous "fly-bys".¹⁸

The alliance's maritime flanks are exposed to grey-zone/hybrid attacks, especially its private economic infrastructure. 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 which must be better secured.¹⁹ The same can be said for the Black Sea.

The convergence of methods of attack and the targeting of critical commercial or non-military targets inherent in hybrid warfare has not escaped NATO either. As one alliance flag officer 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 harbors, and we see civilian fishing vessels carrying SAM threats".²⁰ While there is a growing recognition of the need to deflect hybrid threats against NATO members and others, the dense interactions in the Baltic Sea Region create

18 Magnus Nordenman, "Russian Flyby of USS Donald Cook Highlights Tensions in the Baltics", USNI News 15 April, 2016. <https://news.usni.org/2016/04/15/russian-flyby-of-uss-donald-cook-highlights-international-tension-in-the-baltics>.

19 Frank Hoffman, "Assessing Baltic Sea Regional Maritime Security", Foreign Policy Research Institute, Philadelphia Paper, 2017; Gary Schaub and Martin Murphy, "Sea of Peace or Sea of War—Russian Maritime Hybrid Warfare in the Baltic Sea", *Naval War College Review* 71, No. 2 (2018), 123–147.

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

a target for more unconventional and sophisticated forms of hybrid threats.²¹

The Black Sea is also recognised as a viable contested space, where Russia uses hybrid tactics when overt military action is too costly or risky.²² Again, as noted by recent assessments, the presence of robust conventional military capabilities underwrites Russia's regional goals.²³ The potential for violent escalation is usually ever-present in these operations.

Russian Future Capabilities. Russian naval modernisation has focused its rather limited resources on its conventional surface forces and its attack submarines.²⁴ This has produced several new classes of ships, many with advanced anti-ship cruise missiles. In addition, Moscow has significantly enhanced its military exclave in the province of Kaliningrad and now Sevastopol. The defensive capabilities in Kaliningrad complicate NATO's responses to crises in the Baltic region.²⁵ The build-up in the Crimea gives Russia a dominant position in the Black Sea and enhances its leverage over many smaller countries who use that sea for essential economic activities.

The modernisation of a family of Russian submarines is relevant to this discussion.²⁶ Russia concentrates on defending its northern bastions and penetrating the North Atlantic with its attack submarines, which are few

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- 21 Advisory Panel on the NATO Summit 2016, "NATO in a World of Disorder", 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), 5.
 - 22 Nikolas Gvosdev "Russia's Strategy in the Black Sea Basin", *War on the Rocks*, 2 August, 2018; Michael Peterson "The Naval Power Shift in the Black Sea", *War on the Rocks*, 9 January, 2019; Ben Hodges, Janusz Bugajski, Ray Wojcik and Carsten Schmiedl "One Flank, One Threat, One Presence", The Center for European Policy Analysis, May 2020; Miruna Sirbu, "Fade to Black, The Black Sea's Strategic Significance", Center for European Policy Analysis, 5 June, 2020.
 - 23 For a comprehensive evaluation, see Steve Flanagan et al., *Russia, NATO and Black Sea Security* (Santa Monica, CA: RAND 2020).
 - 24 Dmitry Gorenburg, "Russia's Military Modernization Plans: 2018–2027", PONARS Eurasia Policy Memo No. 495, November 2017.
 - 25 Stephan Frühling and Guillaume Lasconjarias, "NATO, A2AD, and the Kaliningrad Challenge", *Survival*, vol. 58, No. 2 (April/May 2016), 95–116.
 - 26 For an overview and projection of Russian undersea capabilities, see Kathleen H. Hicks, Andrew Metrick, Lisa Sawyer Samp and Kathleen Weinberger, *Undersea Warfare in Northern Europe* (Washington, DC: Center for Strategic and International Studies, 2016), 8–18.

in number but quite capable.²⁷ This exposes a vulnerability of the alliance. As noted in another study, "NATO and [its] partner nations do not currently possess the ability to quickly counter the Russian undersea challenge in much of the North Atlantic and Baltic Sea".²⁸ This disparity can be exploited in grey-zone tactics where non-attribution and deniability are sought.

Russia retains and is building up options with small undersea vessels from its naval special forces that could conduct hybrid warfare.²⁹ The designs for Unmanned Underwater Vehicles (UUV) that may deploy missiles, mines and torpedoes make progress continuously.^{30 31} These vessels present the element of surprise, ambiguity and non-attribution that are consistent with Russian grey-zone/hybrid activity. Russia can use these small submersibles for covert infiltration activities or to emplace undersea sensors or compromise undersea communication or energy networks.

„What is clear is that a new generation of leaders, who earned their positions after years within the KGB, is applying long-standing Russian concepts of protracted conflict and full spectrum capabilities.“³²

The potential for serious interference in the region has not been overlooked by NATO officials. The Secretary General of NATO has called up

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

28 Hicks et al., *Undersea Warfare in Northern Europe*, ii.

29 David Manjundar, "American vs. Russia: The Race for Underwater Spy Drones", *The National Interest*, January 2016. <http://nationalinterest.org/blog/the-buzz/america-vs-russia-the-race-underwater-spy-drones-14981>.

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

31 Sam Bennett, "Unmanned Undersea Vehicles, Russia", Center for Naval Analyses, 12 November, 2020, slide presentation by author.

32 Oscar Jonsson and Robert Seely, "Russian Full-Spectrum Conflict: An Appraisal after Ukraine", *Journal of Slavic Military Studies*, vol. 28, March 2015; Ben Connable, Jason H. Campbell and Dan Madden, *Stretching and Exploiting Thresholds for High-Order War* (Santa Monica, CA: RAND, 2016); Geoffrey Kirkwood and Dara Massicot, *Russian Measures of Influence Short of Force*, Santa Monica, CA: RAND, 2020.

on the members of the alliance to prepare themselves better to counter hybrid threats more effectively.³³ NATO and European Union governments should redouble their efforts in the Baltic and the Black Sea to counter the Russian arsenal of informational, cyber, economic and hybrid threats. In both theatres, as part of a comprehensive approach, the alliance should focus on an infrastructure protection role in the region.³⁴

Hybrid Threats Out of Region

Another growing concern for the West will be the continued employment of hybrid threats in the Persian Gulf. As noted by Mike Eisenstadt, the Iranian style of war is what they call “non-classic warfare” (*jang-e gheir-e ke-lasik*). In non-classic warfare, highly motivated asymmetric forces imbued with revolutionary religious fervour, and comprising large numbers of inexpensive platforms equipped with advanced munitions, create synergies by blending unconventional and conventional operations.³⁵ As Brian Michael Jenkins observed, “Iran is a master of hybrid warfare”.³⁶ The Iranians have mastered hybrid tactics with proxy forces in land campaigns in Lebanon, Iraq and Syria. Iran has used proxies and its own covert operatives to carry out kidnappings and terrorist bombings, sabotage ships at sea and oil facilities on land, and attack embassies and government officials. Scholars describe the most frequently used Iranian strategy as hybrid warfare.³⁷

33 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).

34 Steve Horrell, “A NATO Strategy for Security in the Black Sea Region”, Atlantic Council Issue Brief, (September 2016), 5; Neil John Melvin, “Rebuilding Collective Security in the Black Sea Region”, Stockholm, SIPRI, December, 2018.

35 Michael Eisenstadt, “Operating in the Gray Zone, Countering Iran’s Asymmetric Way of War”, The Washington Institute for Near East Policy, *Policy Focus* 162 (January 2020). See also Brandon A. Pinkley, *Guarding History: The Islamic Revolutionary Guard Corps and the Memory of the Iran–Iraq War*, Washington, DC: Joint Chiefs of Staff Joint History Office, Special Historical Study No. 12 (July 2018), 39–41.

36 Brian Michael Jenkins, “An All-Out U.S.–Iran War is Unlikely”, RAND blog, 6 January, 2020, at All-Out U.S.–Iran War Is Unlikely. But Low-Level War Expected to Continue | RAND.

37 Ariane M. Tabatabai *No Conquest, No Defeat Iran’s National Security Strategy* (London, Hurst 2020), 17.

Iran's hybrid tactics in the maritime domain are well recognised.³⁸ Since the days of the Revolution, Teheran has applied a form of "guerrilla warfare at sea" in the Persian Gulf by threatening international trade and oil shipping going back to the so-called Tanker War.³⁹ This was the beginning of a campaign in which Iran attacked nearly 200 ships and killed no fewer than 60 sailors. Back then, the United States and its allies had a distinctive conventional superiority over Iran's outdated navy frigates, Silkworm missile batteries and poorly armed small craft. But the IRGC Navy has persistently evolved its tactics and increased its capabilities over the past two decades.

Iran exploits its geographical position along the Gulf, especially its dominant position astride the Strait of Hormuz. At its narrowest point, the strait is only 21 miles wide, and the shipping channel is just 2 miles in each direction, separated by a two-mile buffer lane. Oil tankers carrying crude from Gulf ports have to pass through the strait. Around 18.5 million barrels of crude and refined products move through it annually, about 20% of all oil produced. That makes the waterway the world's most extremely sensitive energy and commercial choke point. Iran's military doctrine exploits its geopolitical position astride the strait and in the Gulf to leverage its influence. This doctrine applies a hybrid combination of conventional and irregular tactics and weapons to posit a significant anti-access threat to both military and commercial shipping. Closing the narrow seas to all traffic is not in Iran's interests in the long run, but it does give them some geopolitical leverage in crisis management.⁴⁰

The Iranians have two major naval forces. The Iranian Navy (IRIN) is a small conventional force that focuses on the Indian Ocean. The Iranian Revolutionary Guard Corps also contains a maritime force (IRGCN), which is assigned missions that are principally executed inside the Persian

38 My previous examination of malign maritime activities by Iranian forces is in F. G. Hoffman, "Hybrid Threats, Neither Omnipotent nor Unbeatable", *Orbis*, vol. 54, No. 3 (Summer 2010), 441–455.

39 This section leverages insights by Dr David B. Christ, "Gulf of Conflict A History of U.S.-Iranian Confrontation at Sea", Washington DC: The Washington Institute for Near East Policy, Policy Focus, June 2009; as well as Craig L. Symonds, *Decision at Sea: Five Naval Battles That Shaped American History* (New York: Oxford University Press, 2005), 265–320.

40 For a more current assessment of the military considerations involved, see Sidharth Kaushal, "Would Iran Really Try to Close the Strait of Hormuz?", *The National Interest*, 11 December, 2020.

Gulf.⁴¹ It is the latter organisation, built up since the 1980s, that has developed into an agile and distributed maritime force which is hybrid in character and increasingly lethal.⁴² The rough handling of the Iranian Navy in the 1980s accelerated the advent of more sophisticated tactics using fast inshore attack craft (FIAC). The IRGCN is recognised as the foremost “practitioner of small boat ‘swarm’ tactics that combine speed, mass, coordinated manoeuvre, low radar signature, and concealment”.⁴³

The doctrine has been demonstrated repeatedly over the past decade. In January 2012, three Revolutionary Guard speedboats harassed the USS *New Orleans*. The small craft came within 500 yards of the amphibious transport ship as it was transiting the Strait of Hormuz. On the same day, small Iranian boats also harassed the US Coastguard cutter *Adak*, which was operating east of Kuwait City.⁴⁴ In 2018, a UK flagged oil tanker was seized despite the presence of the UK frigate *Montrose*. In the summer of 2019, a Japanese-owned oil tanker was mysteriously struck by a mine or missile as it approach the strait, which the United States insisted was a form of Iranian provocation.⁴⁵ In late July 2020, the IRGCN and the Aerospace Force kicked off Iran’s fourteenth Great Prophet naval drills (GP-14) by firing ballistic and anti-ship missiles and staging a swarm attack against a mock-up of an American aircraft carrier.⁴⁶ As South Korea recently found out with the seizure of one of its oil tankers in the Gulf by the IRGCN, energy and economic security can be attacked far from home with Iran’s irregular approaches.⁴⁷

41 On the structure and basic division of labour between Iran’s two naval forces, see U.S. Defense Intelligence Agency, *Iranian Military Power: Ensuring Regime Survival and Securing Regional Dominance* (Washington, DC, 2019); Office of Naval Intelligence, *Iranian Naval Forces: A Tale of Two Navies* (Washington, DC, February 2017).

42 Richard Scott, “Surviving the Swarm: Navies Eye New Counters to the FIAC Threat”, *Jane’s Navy International*, vol. 199, No. 2 (March 2014), 20–27; Farzin Nadimi, “Iran’s Evolving Approach to Asymmetric Naval Warfare: Strategy and Capabilities in the Persian Gulf”, *The Washington Institute for Near East Policy Policy Focus #164*, April 2020.

43 Scott, 20.

44 Michael Connell, *Gulf III: Iran’s Power in the Sea Lanes*, Washington, DC: United States Institute of Peace (March 2013).

45 Ben Dooley, “Flying Object Struck Tanker in Gulf of Oman, Operator Says, Not a Mine”, *New York Times*, 14 June, 2019, A1.

46 Farzin Nadimi, “Iran Applies Maximum Power to Annual IRGC Naval Exercise”, *The Washington Institute for Near East Policy Watch*, #3362, 10 August, 2020.

47 Simon Denyer, Min Joo Kim and Erin Cunningham, “Iran: Seizure of S. Korean Tanker is Not Hostage-Taking”, *Washington Post*, 6 January, 2021, A14.

Capabilities. Iranian military capabilities include a small fleet of frigates, fast patrol craft and a few submarines. It also possesses the world's fourth largest mine inventory, estimated at 5,000 mines, including modern influence mines. The IISS *Military Balance* credits the Iranians with 56 missile attack craft.⁴⁸ However, recent reports suggest that Iran recently augmented/modernised that collection in May 2020 with an indigenously produced flotilla of missile boats.⁴⁹ The 600-ton *Fateh/Conqueror*-class submarine was delivered in February 2019.⁵⁰ This could reflect a substantial increase in both the endurance and range of the IRIN.

More ominously for the region, the IRGCN has recently commissioned a ship capable of deploying and supporting both small craft and helicopters, giving Iran more range to support operations.⁵¹ Recent reports suggest that the Iranian Navy will soon field the Abu Mahdi cruise missile, which will expand its anti-ship strike capability to 650 miles, tripling its current range. The IRGCN also recently advertised updates to its shipborne air defence system, one capable of multiple, simultaneous engagements. The IRIN has also announced upgrades to its Ghadir submarines, supposedly improving their surface strike capability and survivability through signature reduction.⁵² The unveiling of what was purported to be an Iranian UUV in May 2020 requires continued observation.⁵³

Up until a few years ago, one could scoff at Iranian tactics and conclude that the country's ability to seriously degrade energy shipping and maritime infrastructure was limited.⁵⁴ Iran's indirect but highly destructive attack on the oil production facilities at Abqaiq demonstrate that Teheran is

48 International Institute of Strategic Studies, *The Military Balance 2020* (Oxon: Routledge, 2020), 120.

49 Orkhan Jalilov, "Iranian Navy Receives over 100 Missile Boats", *Caspian News*, 30 May, 2020. <https://caspiannews.com/news-detail/iranian-navy-receives-over-100-missile-boats-2020-5-29-30/>.

50 <https://en.mehrnews.com/news/142565/Fateh-submarine-enjoys-specialized-exclusive-features-MOD>.

51 Jeremy Binnie, "IRGC Navy unveils new base ship", *Janes*, November, 2020, at [IRGC Navy unveils new base ship](https://www.janes.com) (janes.com).

52 See the official news agency posts at <https://en.mehrnews.com/news/142826/Ghadir-submarine-successfully-launches-cruise-missile> and <https://en.mehrnews.com/news/163374/Surface-to-surface-missile-fired-from-Ghadir-class-submarine>.

53 Iranian official news accounts should be viewed with scepticism. See <https://en.mehrnews.com/news/159263/Iran-gets-admission-into-Uncrewed-Underwater-Vehicle-elite-club>.

54 Joshua R. Shiffrin and Miranda Priebe, "A Crude Threat: The Limits of an Iranian Missile Campaign against Saudi Arabian Oil", *International Security* 36, No. 1 (Summer 2011), 167–201.

clearly capable of precision strikes at the region's most critical infrastructure.⁵⁵ Iran appears to want to build on this capability, which will impact Western interests in the Gulf and Western maritime traffic in the Bab al-Mandab strait.⁵⁶ NATO must be prepared to address this adaptive and hybrid form of threat in the Gulf, as it is doing in the Baltic and Black Seas.

Chinese Little Blue Men

NATO has now recognised that it needs to begin thinking about China from a security perspective, which will necessitate that the alliance begins thinking about embracing indirect methods. The last decade manifestly demonstrates that China uses coercive force in innovative ways. "Hybrid warfare has deep historical and cultural roots in China," the Australian scholar Ross Babbage has noted.⁵⁸ Naturally, China's conducting of hybrid operations is culturally adapted to reflect its unique strategic culture and particularly its geostrategic position in the Pacific Ocean. China has been carefully adapting its maritime assets and extending its influence, conducting grey-zone activities with "Chinese characteristics".⁵⁹ China has sought to apply what Chinese General Zhang Zhaozhong described as a "cabbage strategy", one in which China wraps disputed waters in layers of coast-

55 The September 2019 combined cruise missile and drone attacks on the Saudi Aramco's Abqaiq and Khurais oil fields caused extensive damage. Isabel Coles and Dion Nissenbaum, "U.S.-Saudi Pipeline Attacks Originated in Iraq", *Wall Street Journal*, 28 June, 2019. <https://www.wsj.com/articles/u-s-saudi-pipeline-attacks-originated-from-iraq-11561741133>.

56 Afshon Ostovar, "The Grand Strategy of Military Clients: Iran's Way of War", *Security Studies* 28, No. 1 (January-March 2019), 183.

57 On Iranian military developments, see DIA *Iranian Military Power*, 48-56 and 85-86; Shahryar Pasandideh, "Under the Radar, Iran's Cruise Missile Capabilities Advance", *War on the Rocks*, 25 September, 2019.

58 Ross Babbage, *Stealing a March: Chinese Hybrid Warfare in the Indo-Pacific*, vol. 1 (Washington, DC: Center for Strategic and Budgetary Assessment, 2019), 41-46.

59 For numerous insights, see Andrew S. Erickson and Ryan Martinson, eds., *China's Maritime Gray Zone Operations* (Annapolis, MD: Naval Institute Press, 2019); Ketian Zhang, "Cautious Bully: Reputation, Resolve, and Beijing's Use of Coercion in the South China Sea", *International Security*, vol. 44, No. 1 (Summer 2019), 117-159.

guard, maritime militia, fishing administration, marine surveillance and its massive fleet of fishing vessels.⁶⁰

China tends to keep its conventional force in over-watch position in the background, relying on more aggressive use of coastguard/maritime law enforcement vessels when responding to or instigating disputes at sea.⁶² The threat of force is always present since its assets are armed, and the conventional PLA Navy is nearby as a security blanket in the event of escalation and as an escort when Beijing is trying to coerce a nearby state.

China's maritime grey-zone operations represent a challenge for the US and its allies around the globe, not just the South China Sea. In that region, Beijing conducts operations to extend its influence, delegitimise international law and norms, and change the status quo without resorting to war, an approach called "War without Gun Smoke" (一场没有硝烟的战争) by some sources.⁶³ While it is building an impressive grey-hulled navy, it is China's second and third sea forces, the "white-hulled" Coast Guard and "blue-hulled" Maritime Militia, that serve at the front lines of China's maritime strategy in day-to-day operations. The Chinese have weaponised their merchant fleet to advance their national interests, and analysts note that these maritime assets are an armed militia that can engage in crisis situations.⁶⁴ One should not overestimate the effectiveness of this maritime militia, as their poor training, limited platform speed, and unproven command-and-control capabilities limit their contribution. They can, however, complicate crises and congest waterways with raw numbers but have little military functionality. In addition, China deploys more than 800,000 fishing vessels, of which some 4,600 are large distant fishing ships.⁶⁵

60 Michael Beckley, "Balancing China, How to Check Chinese Military Expansion in East Asia", Belfer Center for Science and International Affairs, Harvard University, *Policy Watch*, November 2017. <https://www.belfercenter.org/publication/balancing-china-how-check-chinese-military-expansion-east-asia>.

61 For insights into China's coercive activities in the region, see "A Game of Shark and Minnow", *New York Times Magazine*, 27 October, 2013. <https://www.nytimes.com/newsgraphics/2013/10/27/south-china-sea/index.html>.

62 Conor M. Kennedy and Andrew S. Erickson, "Tethered to the PLA: China's Third Sea Force, The People's Armed Forces Maritime Militia", *China Maritime Report*, No. 1, China Maritime Studies Institute, U.S. Naval War College, March 2017.

63 Andrew S. Erickson and Ryan D. Martinson, *China's Maritime Gray Zone Operations* (Annapolis, MD: Naval Institute Press, 2019). See also Hunter Stires, "Win Without Fighting", *Naval Institute Proceedings*, June 2020.

64 Andrew S. Erickson, Statement to the Subcommittee on Seapower and Power Projection Forces of the House Armed Services Committee, 21 September, 2016.

65 Shuxian Luo and Jonathan G. Panter, "China's Maritime Militia and Fishing Fleets", *Military Review* (January–February 2021), 7–21.

Some naval analysts refer to the combined use of these maritime assets as “interagency operations”.⁶⁶ The Chinese government has used such operations in the maritime arena. These include hazardous ship handling against the American surveying vessel, USS *Impeccable*, taking action against Vietnamese fishing and economic zone rights, and a number of measures against the maritime claims and fishing rights of the Philippines.⁶⁷ As noted in the Pentagon’s report on China’s military power, there is a pattern of activities ranging from “the 2012 Scarborough Reef standoff, the 2014 Haiyang Shiyou-981 oil rig standoff, and a large surge of ships in waters near the Senkakus in 2016”.⁶⁸ Beijing, routinely tries to intimidate Hanoi along its coast, and most recently at their major oil extraction site at Vanguard Bank.⁶⁹

China claims its maritime objectives are completely defensive. Certainly, China has energy and resource requirements, and nearly 80% of its crude oil and the bulk of its global trade passes through the waters of the South China Sea. To secure its interests, however, it is deploying advanced sensors and air defence systems—to artificial islands that provide defensive reach to their airfields and facilities. In 2018, the PLA moved anti-ship cruise missiles and surface-to-air missile systems to three SCS positions in and around the Spratlys, insisting that such moves were purely defensive.⁷⁰ No one should be fooled by these misrepresentations.

66 For insights into Chinese naval modernisation and organisational trends, see Ian Burns McCaslin and Andrew S. Erickson, “The Impacts of Xi-Era Reforms on the Chinese Navy”, in Philip C. Saunders et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Washington, DC: NDU Press, 2019. On “interagency operations” with the various sea forces, 147–152. For the latest in Chinese naval modernisation, see Ronald O’Rourke, “China Naval Modernization: Implications for U.S. Navy Capabilities”, Washington, DC: Congressional Research Service, 3 December, 2020.

67 For detailed coverage of various past cases, see Michael Green, Kathleen H. Hicks, Zack Cooper, John Schaus and Jake Douglas, “Countering Coercion in Maritime Asia: The Theory and Practice of Gray Zone Deterrence”, (Washington, DC: CSIS, May 2017), 52–262.

68 Office of the Secretary of Defense, *Military and Security Developments Involving the People’s Republic of China 2018* (Washington, DC: Department of Defense, 16 August, 2018).

69 Trinh Le, “The Vanguard Bank standoff shows China remains undeterred”, *The Interpreter*, Lowy Institute, 6 August, 2019. <https://www.lowyinstitute.org/the-interpreter/vanguard-bank-standoff-shows-china-remains-undeterred>.

70 Oriana Skylar Mastro, Statement before the House Foreign Affairs Committee Subcommittee on Asia, the Pacific, and Non-Proliferation On Chinese Maritime Ambitions China’s Maritime Ambitions Implications for U.S. Regional Interests,

Although these grey-zone/hybrid campaigns are indirect and fall well below the threshold of classical Western concepts of conventional warfare, they do challenge the extant order and the leadership of the United States and its allies. As Babbage summed up:

“[...] it would be a mistake for allied and partner governments to underrate the importance of these Chinese operations. The cumulative effects of the detached and often unfocused U.S. and allied responses to Beijing's hybrid campaigns have been profound. Over the course of decades, the Chinese communist regime has extended its territorial control over large regions of strategic importance, many states and international organizations have been intimidated into acquiescence, and great damage has been done to the credibility of the United States and its allies in the Indo-Pacific.”⁷¹

It would also be a mistake not to consider how China's recent appearances in other oceans and its investments in extensive port operations could be exploited in the same way.

In terms of future challenges, the Chinese (like the Russians) are expanding their use of commercial security operations with 20 international PMCs employing over 3,000 personnel.⁷² One can expect that as the Belt and Road Initiative evolves and the Chinese acquire broader economic interests, they will need to protect these in some way.⁷³ Undersea security, either in surveillance or military applications, may also emerge in hybrid scenarios. Like the United States and Russia, China is pursuing unmanned undersea systems, which could be employed in non-conventional conflict

30 June, 2020, 4. Can be accessed at HHRG-116-FA05-Wstate-MastroO-20200630.pdf (house.gov).

71 Babbage, 3.

72 Fatoumta Dialio, “Private Security Companies: The New Notch in Beijing's Belt and Road Initiative?”, Stockholm, Sweden, Institute for Security and Development Policy, 5 June, 2018; Alessandro Arduino, “China's Private Security Companies: The Evolution of a New Security Actor”, Washington, DC, *NBR Special Report #80* (September 2019).

73 “Guarding the Silk Road, How China's Private Security Companies are Going Global”, World Economic Forum, 24 October, 2018. <https://www.weforum.org/agenda/2018/10/guarding-the-silk-road-how-chinas-private-security-companies-are-going-global>; Sergey Sukhankin, “Chinese Private Security Contractors: New Trends and Future Prospects”, *China Brief*, vol. 20, No. 9 (15 May, 2020). <https://jamestown.org/program/chinese-private-security-contractors-new-trends-and-future-prospects/>.

settings.⁷⁴ Indonesia collected three, presumably, Chinese undersea drones in its waters near Selayar Island in late December 2020.⁷⁵

Thus, alliance maritime interests, including sustaining international law and having access to key resources around the globe, are at risk. “As evidenced by their hybrid operations in the South and East China Seas...,” some analysts conclude, “PRC leaders are clearly pursuing more complex and less-escalatory paths” to confront the West and undermine the current international order.⁷⁶ Since NATO recognised China as part of its growing and expanded agenda, China has behaved the alliance to ensure it understands the PLAN and the other layers to China’s maritime coercion.

Assessment

To sum up, several powers are contesting international law and norms that the alliance benefits from, and the maritime domain is a part of this contest. Each of these three challengers will apply indirect modes of conflict in distinctive ways, but their multi-modal combinations are not novel and can be countered. However, the alliance is not yet prepared, strategically or organisationally, to respond.

Addressing hybrid threats and modes of coercion facing the West requires a holistic appreciation of the challenges, and a strategy that gives appropriate weight to the alliance’s maritime vulnerabilities.⁷⁷ Up to this point, initiatives like the European Defense Initiative lacked a substantial maritime dimension. Senior NATO officials are clear that the alliance

74 Kelvin Wong, “China’s Unmanned Maritime Vehicle Development, Present and Future”, Jane’s Defence Systems, 12 November, 2020, slide presentation by author.

75 Kristin Huang, “China’s underwater drones seized in Indonesia expose tech, routes and potential submarine plans”, *South China Morning Post*, January 2021. <https://www.scmp.com/news/china/military/article/3117076/chinas-underwater-drones-seized-indonesia-expose-tech-routes>; H. I. Sutton, “Chinese Survey Ship Caught ‘Running Dark’ Give Clues to Underwater Drone Operations”, USNI News, 16 January, 2021. <https://news.usni.org/2021/01/16/chinese-survey-ship-caught-running-dark-give-clues-to-underwater-drone-operations>.

76 Bryan Clark, “The Navy Should Make Hard Choices to Implement its New Strategy”, *Aerospace & Defense*, 27 December, 2020.

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

must improve its deterrence posture and improve the territorial defence of member states.⁷⁸ To do so, it must place more weight on addressing the growing maritime challenge, including that beyond its most immediate waters. Responding to maritime conflicts short of high-intensity conventional war requires the sort of government approaches espoused for the stability campaigns of South Asia and the Middle East.⁷⁹ The concept of “Total Defence” developed in the Nordic region to address vulnerabilities can be expanded to address possible gaps in maritime security and ensure the economic interests of the region.⁸⁰

Polymakers recognise that an updated Alliance Maritime Strategy (AMS) is needed.⁸¹ The AMS should seek to incorporate the full nature of challenges facing members from a maritime security perspective, not just conventional military threats ashore. The priority for NATO's naval forces should be aligned towards deterring major aggression, but an era of strategic competition requires greater breadth, with attention placed on the undermining of maritime security short of overt warfare. China no doubt will continue to enhance the PLA-Navy into a powerful instrument over time. But for now, there is more to war than conventional battles, and it is more politically and economically important to leave maritime security just to admirals.⁸² NATO is encouraged to work with the EU and critical stakeholders like the private sector/commercial institutions. As the US Department of the Navy's latest maritime strategy notes, “Forward naval forces, leveraging our complementary law-enforcement authorities and military capabilities, will stand ready to disrupt malign activities through

78 Philip M. Breedlove, “NATO's Next Act: How to Handle Russia and Other Threats”, *Foreign Affairs*, (July/August 2016), 100.

79 Shawn Lansing, “A White Hull Approach to Taming the Dragon: Using the Coast Guard to Counter China”, *War on the Rocks*, 22 February, 2018; Patrick M. Cronin and Hunter Stires, “China is Waging a Maritime Insurgency in the South China Sea”, *National Interest*, 6 August, 2018; Walker Mills, “White Ships for Gray Zones”, *Naval Institute Proceedings*, February 2020. The latter accessed at <https://www.usni.org/magazines/proceedings/2020/february/white-ships-gray-zone>.

80 Hakon Lunde Saxi, Bengt Sundelius and Brett Swaney, “Baltics Left of Bang: Nordic Total Defense and Implications for the Baltic Sea Region”, Washington, DC: Institute for National Strategic Studies, *Strategic Forum* #304, January 2020.

81 Nordenman, “Updating NATO's Maritime Strategy”, 12–13; and Nordenman, “From Submarines to Smuggler Skiffs”, 59.

82 Jonathan D. Caverley and Peter Dombrowski, “Too Important to Be Left to the Admirals: The Need to Study Maritime Great-Power Competition”, *Security Studies*, 29, No. 4, 2020, 579–600.

assertive operations”.⁸³ The alliance’s strategy must be prepared to do the same.

A maritime strategy may also require organisational transformation as well as conceptual adaptation. As Admiral James Stavridis noted a few years ago, it is time for a collective “response to hybrid warfare at sea, which may require developing new tactics and technologies, working closely with allies and partners”.⁸⁴ It may also require new partnerships and organisations. Standing maritime security task forces that provide port and infrastructure security, domain awareness and law enforcement capabilities in key regions are one potential solution.⁸⁵

Conclusion

The relevance of the sea will rise in the 21st century⁸⁶; so will indirect challenges to the use of the maritime domain. Today, the alliance is stronger than it was in 2014 in so many respects. Yet, it remains underprepared for maritime versions of hybrid conflict. By whatever name one wants to call it, “Hybrid warfare is coming to a theater of war near you,” as Admiral Stavridis concluded.⁸⁷ The question is not “if” but when, and where or in what theatre, future actors will seek to evade the alliance’s trident.

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83 Secretary of the Navy, Kenneth J. Braithwaite et al., *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power* (Washington, D.C.: U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard, 17 December, 2020).

84 Admiral James Stavridis, U.S. Navy (ret.), “Hybrid Maritime Warfare is Coming”, *Naval Institute Proceedings* (December 2016), 34.

85 Eric Sayers, “Time to Launch a Combined Maritime Task Force for the Pacific”, *War on the Rocks*, 1 June, 2018.

86 Geoffrey Till, *Seapower A Guide for the Twenty-First Century* (New York: Routledge, 2013), 339.

87 Stavridis, 33.

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Below the Surface: Undersea Warfare Challenges in the 21st Century

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Introduction

During the Cold War the naval stand-off between the USA and the Soviet Union (USSR) was an important part of the bloc confrontation. Within this stand-off, submarines evolved into the key strategic assets on both sides. To gain advantage, NATO and the USSR invested heavily not only in new submarines but also anti-submarine warfare (ASW) techniques and tactics. At the end of the Cold War fleets on both sides of the iron curtain were designed to either conduct submarine operations or counter them, and were and highly sophisticated in doing so. While the proud Soviet fleet fell victim to the economic, political and social turmoil in post-Soviet Russia and its former satellite states, Western navies quickly committed themselves to new but different tasks that made less use of submarines and anti-submarine warfare.

In the absence of a peer sea-control competitor, NATO's future role was questioned, and the alliance had to adapt its role within the architecture of international security—or alternatively become history itself. 'Out of area or out of business' was the motto of the hour. NATO units began to play an important role in conflict and crisis management in the Eastern Mediterranean, the Persian Gulf or the waters around the Horn of Africa. Those low-end maritime security tasks were executed by highly sophisticated cold warriors, optimised for the cold waters of the North Atlantic, with a strong emphasis on high-end warfare and ASW.¹ But the longer the situation remained, the more planners and operators adapted to it: Exercises focused more on humanitarian assistance and disaster relief (HADR), vessel boarding, and search and seizure operations rather than on convoy operations across the Atlantic or ASW in the Greenland-Iceland-United Kingdom (GIUK) gap. On the political side, there was a strong appetite to cash in on the so-called peace dividend after the victory of the Cold War.

1 See also this book's chapter by Sebastian Bruns.

This led to a broad decline in defence budgets and a significant reduction in the size of NATO's fleets.²

Today, all Western navies operate a significantly smaller battle force than in 1990. New platforms, ordered in fewer numbers, were designed to fulfil the plethora of low-intensity maritime security tasks Western navies faced in the 1990s and early 2000s. Multi-mission capability was the credo used to acquire funding at that time. Especially in Europe, this resulted in relatively large but, compared with their Cold War predecessors, lightly armed frigates optimised for long out-of-area deployment and the lower end of maritime security tasks—the latest F125 frigate class in the German Navy is archetypal of this development. It is fair to say that the extensive utilisation of the peace dividend resulted in the atrophy of high-end warfare capabilities and skills across all Western and NATO navies, but to varying degrees.³

Given the fact that developing and operating subs—and maintaining adequate countermeasures—means constantly pushing technological boundaries, ASW belongs to the most complex, difficult and expensive maritime warfare areas. It comes as no surprise that this capability has atrophied most since 1990. Moreover, because of its complex nature, it takes a lot of effort, time and money to bring ASW back into a fleet's mindset and platforms.

This chapter will examine why Western navies should start to invest effort, time and money in regaining their ASW capabilities sooner rather than later. It will look at current threats and developments in the underwater domain in Europe, the North Atlantic and beyond. It will further examine what future ASW will look like, what role unmanned systems could play and what problems may arise from this both tactically and strategically.⁴

2 Jeremy Stöhs, "Into the Abyss? European Naval Power in the Post-Cold War Era," *Naval War College Review* 71, 3, Article 4 (2018). <https://digital-commons.usnwc.edu/nwc-review/vol71/iss3/4>.

3 For a detailed analysis of the development of European navies after 1990, see Jeremy Stöhs, *The decline of European naval forces: Challenges to sea power in an age of fiscal austerity and political uncertainty* (Annapolis, Maryland: Naval Institute Press, 2018).

4 I am indebted to friends and colleagues on both sides of the Atlantic for critically reviewing this chapter. You know your fair share! All remaining weaknesses are solely mine.

The bear and the dragon — current threats

Recent years have seen a boost in technological innovations in the undersea domain and submarine procurement all around the globe. This chapter provides a brief overview of this trend, focusing on the players that generate the most significant strategic challenges.

From a NATO but also an EU perspective, the strategic challenger in the underwater domain is Russia. The Russian Navy went through a valley of tears in the 1990s and early 2000s, with the loss of *Kursk* as a dramatic low point, and has only slowly recovered in partial areas. However, the nuclear submarine force, the traditional heart of the fleet, managed to maintain at least some of its capabilities and platforms. The Sevماش shipyard, Russia's only yard capable of building nuclear-powered submarines (SSN/SSBN) was able to slowly modernise its manufacturing lines and keep a core of skilled workers. The same applies to the Rubin design bureau, the brain behind Russian submarine development. Nevertheless, both institutions face problems in acquiring young skilled manufacturers and researchers—it is unclear, how this will affect Russia's future submarine capabilities.⁵

For the time being, the Russian submarine fleet (nuclear and conventionally powered) mainly consists of modernised and upgraded cold warriors. However, some significant progress has to be acknowledged. Unlike the USSR, Russia is currently streamlining its submarine fleet to two nuclear-powered classes and one conventional class. The future nuclear fleet will be formed by the Projekt 885 general attack submarine of the *YASEN* class and the Projekt 955 ballistic missile submarine (SSBN) of the *BOREI* class.⁶ The successor to the recently updated diesel electric (SSK) *KILO* class, the *KALINA* class, which is planned to be equipped with an air-independent propulsion (AIP)⁷ system, seems to have overcome some major problems recently. More important, however, is that Russia has established serial production for its SSK. In other words, findings from sea trials and deployments have fused directly into the production process, making innovation cycles shorter and less predictable.

5 Yoshiaki Sakaguchi, *Russia's Policy on Strengthening the Navy and the Defense Industry*; in: NIDS Journal of Defense and Security 15 (December 2014): 64ff. http://www.nids.mod.go.jp/english/publication/kiyo/pdf/2014/bulletin_e2014_4.pdf.

6 Kathleen H. Hicks, *Undersea warfare in Northern Europe* (Washington, DC, Lanham, MD: Center for Strategic & International Studies; Rowman & Littlefield, 2016), 14ff.

7 Conventional submarines equipped with AIP are referred to as SSP.

The planned ten *BOREI* SSBN will replace the aging *DELTA-III* and *-IV* boomers and will form the backbone of the Russian sea-based nuclear deterrent. Currently four out of ten planned boats are in service. While the first three platforms were built by cannibalising older *AKULA* and *OSCAR* classes, the *Knyaz Vladimir* (commissioned in 2020) marks the first all new *BOREI*, incorporating improved stealth and systems and is therefore titled *BOREI-II*. It can carry 16 Bulava ballistic missiles with a range of 5000 nautical miles (nm).⁸

The nuclear-powered attack/cruise missile submarines (SSN/SSGN) of the *YASEN* class face a similar fate. While the first of the *Severodvinsk* class took almost 18 years to complete, her successor is on a better schedule and is expected to enter into service this year. Like the *BOREIs*, the second boat incorporates significant design changes, resulting in its classification of *YASEN-M*. The boats are equipped with a vertical launch system (VLS) and can carry 32 cruise missiles. They are seen as comparable in stealth and acoustic sensing to the Virginia class, and have more VLS cells than all but the future Block V Virginias.⁹ Overall, they are highly sophisticated boats and real peer adversaries to Western navies.¹⁰ Armed with Kalibr and/or Onyx cruise missiles and capable of carrying the hypersonic Tsirkon cruise missile recently under development, these platforms are embedded into a comprehensive national security strategy that incorporates the upgrading of sea, air, land and space assets in combination with enhanced long-range precision strike capabilities. This makes them a strategic challenge for NATO and Western navies.¹¹ Russia also improved the operational schedule for its submarines. In October 2019, it made international headlines by deploying no fewer than ten nuclear-powered subs in the north Norwegian Sea and the North Atlantic. Western navies were caught off guard. Flanked by exercise Ocean Shield in the Baltic and smaller exercises in the Mediterranean, it created shockwaves across the Atlantic and caught Western navies short-handed. Also serving domestic needs, it was a strong stra-

8 H.I. Sutton, "H I Sutton—Covert Shores," accessed 12 January, 2021. <http://www.hisutton.com/Borei-A.html>.

9 Dave Majumdar, "U.S. Navy Impressed with New Russian Attack Boat—USNI News," accessed 24 February, 2021. <https://news.usni.org/2014/10/28/u-s-navy-impressed-new-russian-attack-boat>.

10 Franz-Stefan Gady, "Russian Navy to Speed up Test Launches of Tsirkon Hypersonic Missile," accessed 13 January, 2021. <https://thediplomat.com/2020/04/russia-n-navy-to-speed-up-test-launches-of-tsirkon-hypersonic-missile/>.

11 Magnus Nordenman and James Stavridis, *The new Battle for the Atlantic: Emerging naval competition with Russia in the Far North* (Annapolis, Maryland: Naval Institute Press, 2019), 132ff.

tegic signal towards NATO and the US that Russia is able to disrupt transatlantic reinforcement on a large scale and with almost no warning time.¹²¹³

While it is safe to say that submarines appear to have a high priority in Russia's effort to rebuild its naval might, it is not entirely clear how they will be deployed. With its naval base in Tartus, Syria, Russia has achieved its long-desired goal of an ice-free warm water port in the Eastern Mediterranean, unbinding it from the limitations of the Montreux Treaty, which governs the Bosphorus. In November 2020, Russia signed an agreement to establish a naval base in Sudan capable of hosting nuclear-powered ships. Should this materialise, Russia would become a strategic competitor both north and south of the Suez Canal.¹⁴ However, Western intelligence analysts and strategists alike are well advised not to solely rely on Cold War assumptions when assessing future challenges.¹⁵

Parallel to revamping its navy, Russia has put significant efforts into its deep-sea capabilities. The *Belgorod*, commissioned in 2019 and a transformed *OSCAR-II* SSGN, the biggest submarine currently in service worldwide, will function as a test platform for new underwater weapons but first and foremost as a mothership for deep-diving midget subs. Enriched by a new class of deep-sea research vessels, Russia is primarily aiming at undersea cables. In an early stage of a conflict, disrupting these cables would be one of Russia's main tactics. Wiretapping to gain operational advantages is another option to consider. Lying exposed on the seabed, these cables have become the lifelines of the digital age, transferring ca. 99% of the world's data. These cables are too often legally private property of the companies which operate them, instead of critical infrastructure for Western security, prosperity and well-being. Being able to protect and defend this infrastructure should be a top priority in any Western maritime strategy. The fact that Russia's deep-sea assets are not part of the navy but of the Main Directorate for Deep Sea Research (GUGI) makes their legal status in a conflict

12 Michael Kofman, "The Russian Navy in 2019 (year in review)," accessed 8 February, 2021. <https://russianmilitaryanalysis.wordpress.com/2020/03/07/the-russian-navy-in-2019-year-in-review/>.

13 Richard A. Moss, "Russia basks in cold war glory," *US Naval Institute Proceedings*, 20 October, 2020.

14 Joseph Trevithick, "Russia To Establish Naval Base Capable Of Supporting Nuclear-Powered Ships In Sudan," *The Drive*, 17 November, 2020, accessed 17 November, 2020. <https://www.thedrive.com/the-war-zone/37671/russia-to-establish-naval-base-capable-of-supporting-nuclear-powered-ships-in-sudan>.

15 Norman Polmar, "To understand Russian submarines, think outside the box," *US Naval Institute Proceedings*, October 2019 (2019), 22ff..

less clear and therefore harder to address—thus, a classic grey-zone challenge.¹⁶

The other strategic challenger is China and its People's Liberation Army Navy (PLAN). Though mainly challenging the US Navy (USN), forcing it to relocate both personnel and platforms to the Pacific theatre, this has had direct consequences for NATO and the EU. The often-quoted American pivot to Asia has to be compensated for in Europe and in the North Atlantic by European navies—something which can be challenging, to put it mildly.

The PLAN has undergone impressive modernisation and build-up for the last twenty-five years, making it the world largest navy by sheer asset count. In addition to it adding more and expeditionary capabilities, its primary goal is to reach superiority in the South East Asian theatre.¹⁷ This includes submarine procurement as well. While the mainstay of the PLAN's submarine force is diesel electric, China operates a small fleet of SSN (7) and SSBN (4) with plans for further growth. Though current US analysis estimates that by 2030 the SSK fleet will remain constant (at 55 boats), China aims to replace old and noisy *Kilo* and *Song* class SSK with quiet and capable *Yuan* class SSP, thus increasing the operational value of its conventional fleet significantly. In parallel, the nuclear fleet will almost double to 13 SSN and 8 SSBN. As of today, Chinese nuclear subs are estimated to be well behind Russian boats in regard to their capabilities and stealth. Even though too little is known about the operational viability of the PLAN, the past has shown that China's pragmatic way of dealing with copyright—ranging from simple copy and paste to the aggressive stealing of know-how—has led to it leapfrogging development steps. In combination with the sheer endless capacity of its workforce, Chinese innovation cycles are hard to predict and may be quite short.¹⁸

To complicate matters, Russia and China are strategic challengers in their own right. Another dimension is added by increased cooperation be-

16 Usman Ansari, "Worldwide net cable vulnerability opens new front in any future war," *Warships International Fleet Review*, No. 2 (2021).

17 For a detailed analysis of the People's Liberation Army Navy, see Sarah Kirchberger, *Assessing China's Naval Power: Technological Innovation, Economic Constraints, and Strategic Implications*, Global Power Shift, Comparative Analysis and Perspectives (Heidelberg, New York, Dordrecht, London: Springer-Verlag Berlin Heidelberg, 2015).

18 Ronald O'Rourke, "China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress" (Congressional Research Service, 2020).

tween the two countries. Both face strict Western sanctions, which limit their access to dual-use technology. China relied heavily on Russian arms sales and technology transfer. Russia, in turn, bit the bullet of strengthening a potential adversary to bolster its own weak economy. This partnership by destiny has evolved into deep, mutual military cooperation covering the whole intensity spectrum, including even sensitive areas like intelligence, surveillance and reconnaissance (ISR). Officially not labelled an alliance, their relationship consists of mutual support even if it is of next to no use in supporting their own strategic interests. Russian fighter jets have frequently supported Chinese planes entering disputed airspace between China and Japan around the Senkaku Islands. China supported Russian strategic signalling in the Baltic by sending a naval task group for a combined exercise in 2019. Some experts argue that Sino–Russian ties have become so tight that they could easily evolve into a wartime coalition.¹⁹ A whole new dimension could be added if Russia and China should decide to counter their main competitor—the US—with a combined effort in the Arctic. Russian infrastructure developed and modernised with the industrial and financial power of China would secure Russia de facto control over the Northern Sea Route, increasing its influence on Sino–European trade in the future. In return, China could be granted stationing rights for their SSBN in these Arctic ports. This would provide Beijing with the alternative of having the US mainland within striking distance of their submarine ballistic missiles (SLBM) and reduce the risk of their own SSBN being detected. Perhaps far-fetched today, the possibility of such cooperation should not be neglected altogether.²⁰

Modern, state-of-the-art submarines are often considered to be the weapon of choice with which to counter a superior surface fleet because of their stealth and the fact that sanitising a certain sea space from a probable submarine threat is a time-consuming effort that requires a significant

19 Stephen Blank, “China and Russia: a burgeoning alliance,” *US Naval Institute Proceedings*, March 2020, 63ff, and Sebastian Bruns and Sarah Kirchberger, “The PLA Navy in the Baltic Sea: A View from Kiel,” accessed 22 February, 2021. <https://cimsec.org/pla-navy-baltic-sea-view-kiel/33526>.

20 Lyle J. Goldstein, “Chinese Nuclear Armed Submarines in Russian Arctic Ports? It Could Happen,” *The National Interest*, 1 June, 2019, accessed 21 January, 2021. <https://nationalinterest.org/feature/chinese-nuclear-armed-submarines-russian-arctic-ports-it-could-happen-60302>.

number of assets.²¹ China's massive naval build-up has therefore led to a submarine arms race in South East Asia. Almost all nations in the area have invested or are currently investing heavily in either acquiring submarine capabilities or upgrading their existing fleet.²² This alters the strategic calculus for all players within the region by offering both potential for new alliances and emerging conflicts alike. The common denominators are submarine and anti-submarine warfare capabilities.

The same can be said for a less remote area (from a European/NATO perspective) in the world—the Eastern Mediterranean. Traditionally a maritime security hotspot, Turkey, Israel and Egypt are currently bolstering their submarine forces with new, state-of-the-art SSP from the German manufacturer ThyssenKrupp Marine Systems (TKMS). Together with Russia's established, permanent submarine presence from its Syrian harbour in Tartus, the underwater domain in the eastern Mediterranean is becoming even more contested.²³ It was already a busy area with its energy resources in high demand.

While some experts argue that technological leaps like the use of big data at least alter the strategic significance of submarines, the trends in global submarine procurement indicate that submarines will remain the cutting-edge adversary on the maritime battlefield for the coming decades. To underpin this with some numbers: Today only three states operate strategic bombers and a dozen deploy aircraft carriers (in various forms), but more than forty countries field submarines.²⁴

That leads to the question of how ASW technology and tactics will have to evolve to keep up with this trend.

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- 21 This chapter focuses on the traditional role of submarines as a peer competitor in a naval conflict. However, submarines (and midget subs in particular) can play a decisive role in maritime hybrid/grey-zone conflicts as well. For a detailed analysis of this kind of conflict and its implications for AMS, see this book's chapter by Frank Hoffmann.
 - 22 Geoffrey Till and Collin Koh Swee Lean, eds., *Naval Modernisation in Southeast Asia, Part Two: Submarine Issues for Small and Medium Navies* (Cham: Springer International Publishing, 2018).
 - 23 Russia has also been basing Kilo SSKs in Sevastopol but characterising their visits as voyage repairs to comply with the Montreux Treaty. It is, however, essentially homeporting, thus enlarging the Russian footprint in the Black Sea. See H.I. Sutton, "Russian Black Sea Sub Deployments to Mediterranean Could Violate Treaty —USNI News," accessed 24 February, 2021. <https://news.usni.org/2020/07/08/russian-black-sea-sub-deployments-to-mediterranean-could-violate-treaty>.
 - 24 Bryan Clark, Seth Cropsey and Timothy A. Walton, "Sustaining the Undersea Advantage: Disrupting Anti-Submarine Warfare Using Autonomous Systems" (2020), 11.

Traditional ASW and its shortfalls

ASW has always been a hide-and-seek competition between submarines and their adversary forces. This competition was characterised by the predominant ASW detection method and submarines' efforts to counter it. During WWII, this competition was carried out in the electromagnetic (EM) spectrum, with ASW forces deploying ever-capable radars, taking advantage of the fact that WWII U-boats were in fact submersible ships rather than submarines, as we think of them today. The German type XXI boats were the first to break out of this cycle late in the war, without having any effect on the battlefield though. With the introduction of nuclear propulsion, submarines needed neither to travel on the surface nor to snorkel, ending the electromagnetic-based ASW period abruptly. Since then, the weak point of nuclear submarines has been the constant noise emitted by their nuclear reactors. ASW forces just had to listen carefully. The era of passive sonar and low-frequency analysis and recording (LOFAR ASW) began. This led to a circle of acoustic quietening vs. ever more sensitive sensors. With the introduction of air-independent (AIP) systems, modern SSK (which emit zero machinery noise while submerged) can stay submerged for weeks, narrowing the operational gap to their nuclear-powered sisters and making them peer competitors. Today's cutting-edge submarines, like the American Virginia class SSN or the class 212A SSK operated by the German Navy, are almost impossible to detect with passive sonar alone.²⁵

If ASW forces cannot build on passive sonar alone to stay fit for purpose, what will the future ASW game look like and what will be the determining factors? Non-acoustic detection methods will likely become a factor. When travelling through the water column, a submarine disturbs its environment by creating a bow wave or by changing the sound pattern of a certain sea space. While the physics behind these effects are well known, they could not have been utilised in the past due to the sheer amount of data that needed to be collected and processed. Today "big data" provides the computing power to run alphanumeric real-time models to make use of this data.²⁶ For example, low-frequency (LF) active sonar has a much higher range than regular active sonars. This is offset by its limited infor-

25 Bryan Clark, "The Emerging Era in Undersea Warfare | CSBA," accessed 26 January, 2021. <https://csbaonline.org/research/publications/undersea-warfare/publication/1>.

26 Clark, "Emerging", 10.

mation content and the degrading of the signal at longer ranges. Big data may help to overcome these limitations by enhancing the signals through interpolation—as is done with digital photos. There is a similar way to further improve passive listening devices by using big data to filter out all the ocean noise, enabling them to concentrate on the minor sound emissions of a modern submarine.²⁷

While the possibilities of big data still have to be considered with ‘might’, one agreed game changer is about to alter the hide–seeker competition fundamentally over the next few years: the introduction of unmanned systems into the ASW game. Classic ASW centres on detecting an adversary submarine using seabed-mounted, space or surface assets. After detection, the contact is passed to a maritime patrol aircraft (MPA) to constantly track the submarine using large numbers of sonobuoys. Meanwhile, surface ships and submarines are directed into the estimated operating area of the submarine to finally engage and defeat the adversary. If contact is lost within this process, the whole game is put to a halt and has to restart—at enormous cost for the seeker. As shown, traditional ASW has always been a joint, if not a combined, endeavour requiring a lot of communication, integration and platforms. As shown above, all larger Western navies are struggling with a (overly) small order of battle and are overstretched with a multitude of tasks across the whole intensity spectrum—leaving limited to no capacities for a major-scale ASW operation.²⁸

Another shortfall is that it is principally designed for narrow sea spaces, where geography limits the possible routes for submarines to pass through (like the GIUK gap, for example). While this concept might still be suitable to prevent Chinese submarines from operating behind the first island chain, it has become less appropriate in the North Atlantic. Parallel to modernising its submarine fleet, Russia has put a strong emphasis on building up robust long-range precision strike capabilities. The Kalibr cruise missiles it fields put Russia in a position to threaten main European ports of disembarkation, like Bremerhaven, from the relatively safe waters of the Norwegian or Barents Sea. Instead of traditional SLOC protection, NATO and its allies would need open ocean ASW capabilities to counter this threat.²⁹ Traditional offensive open ocean ASW is a task for SSN, leav-

27 Robert Elliott, “Finding the enemy below,” *US Naval Institute Proceedings*, October 2019 (2019), 27–29.

28 Clark, Cropsey and Walton, “Sustaining,” 41ff.

29 Andrew Metrick, “(Un)mind the gap,” *US Naval Institute Proceedings*, October 2019 (2019).

ing it, from a Western perspective, mainly to the US Navy and, to a limited extent, to France and the UK.

Future ASW technology and tactics

As shown, traditional ASW is time-consuming, asset-intensive and extremely costly. It has to be conducted by allied navies that are operating smaller fleets than thirty years ago across the board and have struggled hard to turn their decline into an upward trend since 2014. Rebuilding a navy is hard; it seems that rebuilding a submarine force is even harder. Given the ramifications of the COVID-19 pandemic, it is unsure whether this trend of growing navies has been built on sand or not. To avoid the dilemma of rising demands against the backdrop of fiscal uncertainty, future ASW concepts have to be both more affordable in peacetime and more effective and scalable in war. They will therefore have to rely on unmanned and autonomous systems. Fielding these systems will be the disruptive leap in the coming decades.

ASW can be divided into three steps: detection, tracking and engagement. History has shown that a submarine, once it is detected, loses its tactical advantage due to its relatively low speed and its lack of sufficient countermeasures. A detected sub will most likely evade a certain area instead of staying on post and engage. Therefore, much more emphasis has to be put on the first two steps, detection and tracking. Here, unmanned systems offer great potential for more effective and relatively cheap new ASW concepts (see Figure 1).

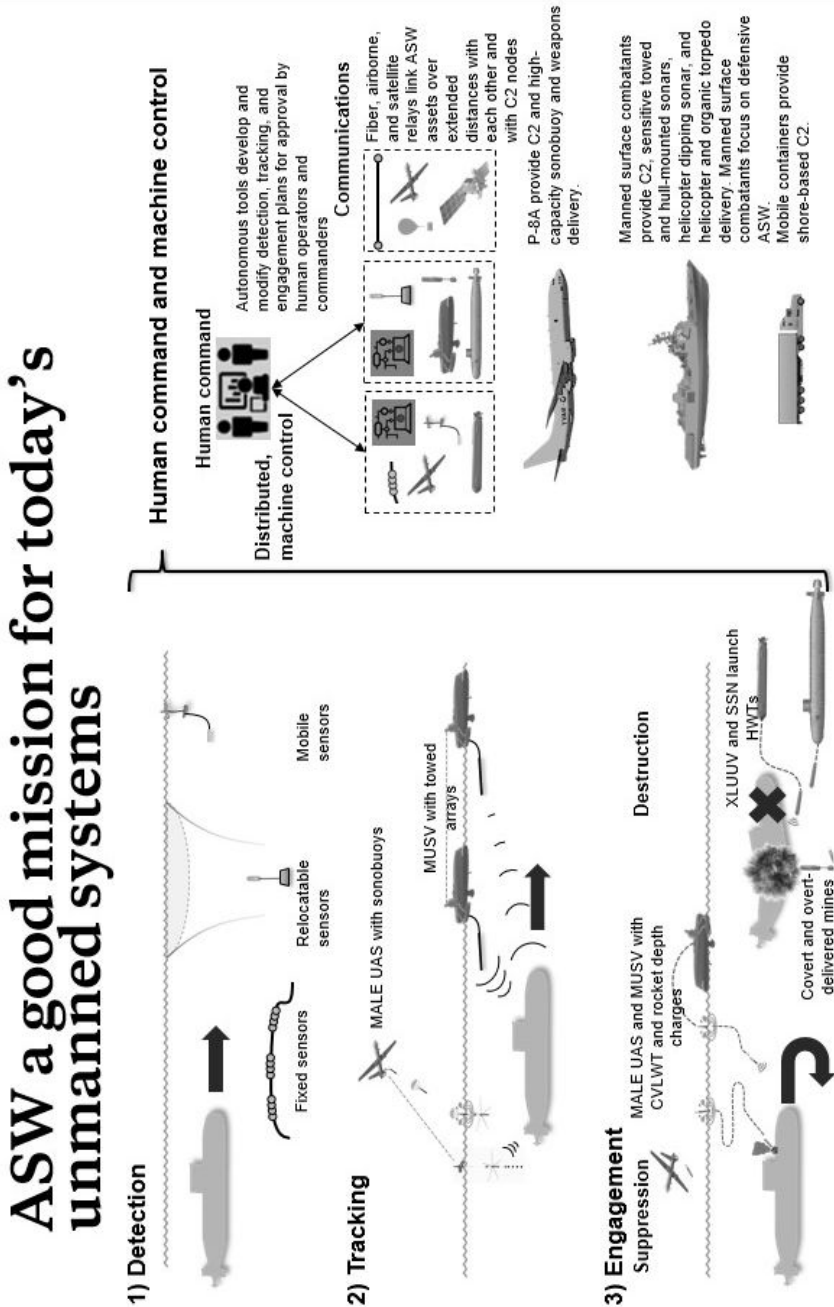
An integrated system of unmanned systems could detect adversaries much closer to their homeports, using fixed and deployable listening devices complemented by medium unmanned surface vessels (MUSVs) or extra-large unmanned underwater vehicles (XLUUVs) with towed passive sonar arrays. Once a contact is established, medium-altitude long endurance (MALE) unmanned aerial vehicles (UAVs), like the MQ-9B SeaGuardian, would track the contact by deploying sonobuoys or using radars. Alternatively, MUSVs, like the Sea Hunter, could trace the contact with passive or active sonars functioning as emitters in a multi-static sensor network, with XLUUVs receiving the signals and keeping contact with the target. In the meantime, manned surface or subsurface assets would be directed to the area to complement the ASW network and to be on the scene should the third step, engagement, become necessary. In a first step, unmanned systems could attack the adversary with small, non-lethal weapons like small depth charges or compact, very lightweight torpedoes

(CVLWT), forcing the submarine to take evasive action. The engagement phase would become more scalable, making it appropriate even to grey-zone scenarios, in which it is unclear what rules of engagement apply. Manned submarines would merely come into play when an assured hard kill capability is needed, as only a submarine can carry a torpedo large and capable enough to guarantee a kill on another submarine, especially an SSN.

Even though unmanned systems would act autonomously to a certain degree in the detection and tracking phase, relying on programmed schemes and machine learning, command and control and the final decision on whether to use force or not would remain in the hands of a human ASW officer deployed to a manned asset (airborne or seaborne). But rather than being directly engaged in the loop, he would be on the loop.³⁰

30 Clark, Cropsey and Walton, “Sustaining,” 6ff. ASW lends itself to humans being on or in the loop because it progresses more slowly than other areas of naval warfare, like missile defence or surface attack.

Figure 1³¹



Implications for allied maritime strategies

The development and proliferation of long-range precision (air, land and sea) strike capabilities has made vast parts of the world's oceans a more contested environment for surface ships than ever before. This, and the fact that submarines are sometimes estimated as a force equaliser against a superior surface fleet, has led to a boost in global submarine procurement in recent years.

Headed by the (re-)emergence of the Russian submarine fleet in the Western and the Chinese submarine fleet in the Eastern theatre, this development has pushed ASW to the top of the prioritisation lists of Western navies and their allies. The complex nature of ASW has always made it not only a joint but a combined endeavour, making it a true alliance case. Simple unboxing of Cold War techniques and tactics has proven improper in countering today's challenges. Buying more equipment will not ease the pressing shortfalls given the long and insufficient procurement lines. Further, the ever-increasing costs of state-of-the-art major combatants have emptied the tight budgets of NATO and EU navies alike, leading to trade-offs and (very) small budgets.³²

On the operational side, hybrid or grey-zone activities carried out by irregular forces with unclear affiliations and conducted below the threshold of an act of war are more likely to occur than 30 years ago. Addressing these threats on the political level requires common acknowledgement of their existence, an agreed definition of such an attack and the criteria of how to measure it. While submarines need not necessarily play a role in hybrid or grey-zone activities, the underwater domain will.

Operationally, it adds another aspect to the challenges NATO and EU navies have to address. To avoid the dilemma of doing more with less and draining tight budgets with highly sophisticated platforms, allied navies will have to rely much more on unmanned and autonomous systems in the future.

Fielding these systems will provide NATO and the EU with affordable, adaptable, quickly deployable and scalable ASW techniques and tactics. Procuring systems at hand off the shelf will help to maintain their under-

31 Graphic taken from Clark, Cropsey and Walton, "Sustaining," 7. I am indebted to Bryan Clark for his kind permission.

32 For a detailed analysis of the challenges smaller navies face when modernising their inventories and how this affects AMS, see Jeremy Stöhs, "How High? The Future of European Naval Power and the High-End Challenge" (Centre for Military Studies, Copenhagen, 2021).

sea advantage, thus generating a lot of bang for their buck. It will further open up an opportunity for smaller navies to have a significant share in combined ASW. For example, the Baltic States should invest in a system of listening devices (both seabed-mounted and deployable) to create a sonar barrier right at the outlet of the Gulf of Bothnia, instead of seeking to acquire costly platforms. Poland, in addition, could opt for a XLUUV with towed sonar array capability instead of maintaining conventional submarines. Completed at the end of the food chain by the highly sophisticated 212A AIP subs of the German navy and its state-of-the-art SIGINT ships³³, a layered ASW network would be established in the Baltic (whether this comes under the NATO or EU flag, FIN and SWE capabilities can be excluded or included). A similar approach with a larger scale and more partners seems appropriate for the North Atlantic.

To unfold the full potential of unmanned systems for NATO, some homework has to be done:

- a) ASW has to be exercised frequently. The annual Dynamic Mongoose/Manta exercises have to be enhanced with a dedicated unmanned component.
- b) Development, implementation and procurement of new technologies has to be streamlined to ensure interoperability and safe communication. The recently established Centre for Maritime Research and Experimentation (CMRE) and the NATO Maritime Unmanned Systems Net-

33 The three German SIGINT ships are of great value not only for Germany but also in an EU and NATO framework, especially against the backdrop of the current situation in the Baltic Sea and the Northern Flank. Though technically state of the art, these platforms are well beyond their initially planned service life and in need of replacement within this decade. While this is acknowledged in general, no design plan or procurement decision has been made yet. The same is true for the eight P3-C Orion MPAs currently in service in the German navy. After the navy cancelled a major service-life extension programme, all platforms will be phased out by 2025. While the German navy strongly argues for the P-8 Poseidon as the only reasonable off-the-shelf replacement, a political procurement decision is not foreseeable. With the economic impact of the COVID pandemic and a national election ahead in September 2021, it is unclear whether any decision will be made this year. Any further delay increases the risk of a capability gap from 2025 onwards weakening Germany's and Western strategic and operational capabilities in the European theatre significantly and sending a disastrous signal to NATO allies about Germany's will to fulfil its defence spending commitments. For the MPAs, see i.a. Thorsten Bobzin, "Deutsche Fähigkeit zum Seekrieg aus der Luft," accessed 23 February, 2021. <https://marineforum.online/die-faehigkeit-zum-seekrieg-aus-der-luft/>.

work (MUS) are steps in the right direction. The EU PESCO initiative could function the same way.

- c) There is a different political appetite for unmanned systems. While states like the USA, GB or France, for example, see the opportunities and operational benefits, parts of the political establishment and society in Germany see the first step towards Terminator-like robo-wars conducted by armies of immoral joystick killers in the mere procurement of such systems. Each ally must therefore define a clear position on to what extent it will support unmanned systems and define its possible role within a combined ASW scenario of manned–unmanned teaming.

Manned–unmanned teaming will be the future for all warfare areas, including ASW. NATO and EU member states alike hold the financial power, research landscape, industrial base and military might to become technology leaders in this warfare area. To do so, political caveats have to be addressed and overcome, national procurement has to be harmonised with allied needs and the potential of every member must be utilised in the best possible way.

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The Relentless Hazard: Allied Maritime Strategy and Climate Change

Alix Valenti

Any examination of the relationship between NATO and climate change could very easily be misconstrued as the beginning of a joke. Something along the lines of: “What do climate change and NATO have in common? They are both full of hot air!” The troubled relationship between Trump and NATO during his four years as 45th President of the US¹, as well as French President Emmanuel Macron’s assertion, in November 2019,² that NATO is becoming brain-dead,³ have indeed done little to publicly restore the reputation of the 71-year-old alliance. So, trying to understand the potential role of the alliance in something as seemingly unrelated as climate change could appear incongruous.

Yet sceptics would do well to dig a little deeper into the issue of climate change. If we move past the debate about whether it is man-made or not—which is irrelevant to the following discussion—, very few doubts exist today as to its impact on international security. In fact, perhaps even more tellingly, in February 2020 the International Military Council on Climate and Security⁴ (IMCCS) published the inaugural ‘World Climate and Security Report 2020’. The foreword of the report notes that

1 In September 2020, there were still rumours that Trump might seek to leave the alliance if re-elected:

Michael Crowley, ‘Allies and Former US Officials Fear Trump Could Seek NATO Exit in a Second Term’, *The New York Times*, 3 September, 2020. <https://www.nytimes.com/2020/09/03/us/politics/trump-nato-withdraw.html>.

2 The Economist, ‘Emmanuel Macron warns Europe: NATO is becoming brain-dead’, *The Economist*, 7 November, 2019.

<https://www.economist.com/europe/2019/11/07/emmanuel-macron-warns-europe-nato-is-becoming-brain-dead>.

3 An assertion he has since attempted to justify:

Patrick Wintour and Bethan McKernan, ‘Macron defends ‘brain-dead NATO’ remarks as summit approaches’, *The Guardian*, 28 November, 2019.

<https://www.theguardian.com/world/2019/nov/28/macron-defends-brain-dead-nato-remarks-as-summit-approaches>.

4 Launched at the Hague, the Netherlands, on 9 February 2019, the IMCCS seeks to address the growing demands from military professionals around the world for

“...[It] provides global and regional assessments of the security risks of a changing climate, as well as opportunities for addressing them. It is the first report of its kind, and is intended to inform future climate and security policy analysis.”⁵

NATO itself has been slow to respond to the issues of climate change and security—climate security. Because it is primarily a military alliance depending on the will of its 30 member countries to cooperate, it has been difficult to move past institutional rhetoric. The difficulties of such coordination are evident in the attempts to develop a ‘Green Defence Framework’, which bears little resemblance to a framework and is more akin to a good practice exchange exercise. Yet, if progress has been slow institutionally, NATO allied navies have been tackling the effects of climate change on international security for quite some time. In fact, some might say that their inherent diplomatic nature—‘soft power’—may well be ground for international cooperation on the matter; it might even serve to reinforce NATO’s ties with partner nations and other allies.

NATO and Climate Security: Energy Efficiency

Understanding the relationship between NATO and climate security is as complex as understanding climate security itself. In its most basic definition, NATO is a military alliance of ‘30 independent member countries’,⁶ whose key commitment to each other is spelled out in Article 5 of the Washington Treaty (emphasis added):

“The Parties agree that an *armed attack* against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in *exercise of the right of individual or collective self-defence* recognised by Article 51 of the Charter of the United Nations, will as-

‘sharing information and best practices on addressing the security and military dimensions of climate change’.

“About”, IMCCS, accessed 15 January 2021. <https://imccs.org/about/>.

5 Product of the Expert Group of the International Military Council on Climate and Security, “The World Climate and Security Report 2020”, edited by Francesco Femia and Caitlin Werrell, (Center for Climate and Security, an institute of the Council on Strategic Risks, 2020), 3.

6 “NATO Member Countries”, NATO, accessed 15 January 2021. https://www.nato.int/cps/en/natohq/nato_countries.htm.

sist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to *restore and maintain the security of the North Atlantic area.*”

In other words, the focus of the alliance is on the North Atlantic area, and the key trigger for individual or collective self-defence is an armed attack.

The notion that climate change presents an international security risk has gained significant traction over the past decade. However, most of the research in the 2000s and early 2010s focused essentially on the effects of climate change on the already precarious security situation of fragile states. Actions to be taken to mitigate such effects were therefore essentially rooted in the realm of Humanitarian Assistance/Disaster Relief (HA/DR) and, to some extent, development.

The publication of the report ‘A New Climate for Peace’⁷ in 2015 significantly contributed to refocusing the debate on a more international scale. As the introduction to the report itself notes,

“Unlike many of the previous reports on climate change and security, this report takes a broader look at fragility, viewing climate change impacts as pressures on states and societies that produce a wide range of fragility risks [...] It reaches beyond the traditional focus on the weakest and most conflict-ridden states by calling attention to the risks posed by climate change for the stability and resilience of more developed countries.”⁸

Given that, for the best part of the 2000s, climate security was seen to primarily affect developing nations and that it does not constitute an armed attack, it is indeed difficult to see how it could be relevant to NATO.

7 The report was commissioned by G7 foreign ministries and prepared by a consortium including Adelphi, International Alert, Woodrow Wilson International Centre for Scholars and European Union Institute for Security Studies.

8 Lukas Rüttinger, Dan Smith, Gerald Stang, Dennis Tänzler and Janani Vivekananda, “A New Climate for Peace: Taking Action on Climate and Fragility Risks”, Report commissioned by G7 members, edited by Meaghan Parker (adelphi, International Alert, Woodrow Wilson International Centre for Scholars, European Union Institute for Security Studies, 2015).

NATO Green Defence

In fact, as an alliance, NATO came to address the relationship between climate change and security by way of energy security. The first steps were taken in 1969 with the establishment of the Committee on the Challenges of Modern Society. The main focus of the Committee revolved around seeking to reduce the harmful impact of military operations on the environment and adapting military assets to the increasingly hostile environments they were called upon to operate in.⁹

There is little evidence, however, that member countries developed significant initiatives in that direction during the second half of the 20th century. The real push for the alliance to start looking into climate change came with the 2008 financial crisis.¹⁰ Under significant pressure to limit public spending, countries around the world introduced austerity measures that included important defence budget cuts.¹¹ However, because during that time a number of NATO members were still involved in the ongoing conflicts in Afghanistan and Iraq, they had to seek new ways to cut costs. Energy consumption emerged as one of the key solutions.

NATO recognises that energy “is fundamental to the execution and sustenance of military missions”, according to the SMART Energy Team (SENT) comprehensive report (2015): “Operational energy efficiency is a key component of ensuring operational resiliency and reducing the financial and logistical challenges of sustaining NATO deployments.”¹² This came to be known as ‘smart energy’, and it was only in the Chicago Summit of May 2012 that allied heads of state and government agreed to work

9 Niklas Bremberg, “European Regional Organisations and Climate-Related Security Risks: EU, OSCE and NATO”, *SIPRI Insights on Peace and Security*, No.1 (2018), 11.

10 Kristian Knus Larsen, “Unfolding Green Defence: Linking green technologies and strategies to current security challenges in NATO and the NATO member states”, (Center for Military Studies, University of Copenhagen, 2015), 4.

11 Data on NATO members’ defence spending as part of their GDP between 1990 and 2013 shows that all countries—except Albania—significantly reduced their defence spending as part of their GDP in 2009:

Public Diplomacy Division, ‘Financial and Economic Data Relating to NATO Defence’, NATO, 24 February 2014. https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_topics/20140224_140224-PR2014-028-Defence-exp.pdf.

12 SENT, “Smart Energy Team (SENT) Comprehensive Report—On Nation’s needs for energy in military activities, focusing on a comparison of the effectiveness of national approaches to reduce energy consumption”, *NATO Science for Peace and Security Programme* (2015), 1.

towards significantly improving the energy efficiency of their forces. The pledge led to the creation of SENT in October 2012 and was reiterated in the Wales Summit Declaration in 2014, giving birth to the 'Green Defence Framework'.¹³

The Green Defence Framework does not, *per se*, establish any specific targets or make any specific demands for efficient or environmentally sustainable activities. Rather, it highlights a number of existing initiatives that could contribute to its three pillars: (1) reinforcing the efforts of NATO bodies, (2) facilitating allies' efforts and (3) improving NATO's green profile.¹⁴ In other words, it encourages good practice exchange amongst NATO members aimed at increasing energy autonomy and reducing the impact of military operations on the environment.

The Limits of the Green Defence Concept

One of the key issues of the Green Defence Framework is that it offers limited information on how the impact of each smart energy initiative is to be measured. NATO is a military alliance heavily dependent upon member nations' common understanding of the key concepts that drive it. The same applies to smart energy. Without a clear definition of the criteria against which national defence smart energy initiatives are to be evaluated, it is difficult to establish a solid basis for a true energy-efficient, resilient and sustainable alliance.

Larsen offers a great example of such challenges by comparing the initiatives taken by the US Navy (USN) and the Italian Navy. In 2009, then US Secretary of the Navy Ray Mabus announced that the Department of the Navy would reduce its energy consumption.¹⁵ Part of the plan was the development and deployment of the 'Great Green Fleet'.¹⁶ The concept of the Great Green Fleet relied on the development of alternative sources of energy and looked closely at the use of biofuels. In 2014, noticing that the

13 *ibid.*

14 Larsen, *Unfolding*, 8.

15 This was based on five specific energy goals: change how the US Navy and Marine Corps awards contracts; develop and deploy the 'Great Green Fleet'; reduce petroleum use in the commercial fleet by 50% by 2015; produce at least half of the shore-based energy requirements from alternative power sources by 2020; and, by 2020, 50% of the Navy's fuel consumption in ships, aircraft, tanks, vehicles and shore installations were to be from alternative power sources.

16 Larsen, *Unfolding*, 15.

USN was making some headway in this direction,¹⁷ the Italian Navy followed suit and took its first steps towards the establishment of the *Flotta Verde* (Green Fleet) with a successful five-hour sea trial demonstration of the use of biofuels on ITS *Foscari*. Initiated in close cooperation with the USN, the Italian project benefited from the experience and lessons learnt from its American ally.

Despite their successful demonstration of the use of biofuels on board navy ships without significantly altering the architecture or systems of the ships, the two projects were heavily criticised. One of the key issues was, in fact, that though biofuels were less harmful to the environment, they did not, however, contribute to energy resilience. The fluctuating prices of crops—likely driven by the increasing demands for these biofuels—had a hand in making the navies highly vulnerable to price changes, which in turn negatively affected their budgets. Larsen concludes: “A precise and narrow description of challenges, tasks, technological solutions, and the links between them will reduce the risk of developing ineffective technologies [...]”.¹⁸

The SENT comprehensive report reveals another key issue concerning the Green Defence Framework’s effectiveness. In preparation for its 2015 report, SENT submitted a questionnaire to NATO members and partner nations to understand “the needs for advocating energy efficiency related to their strategies, projects and definitions”.¹⁹ Only 13 nations replied to the questionnaire.²⁰ Yet already a number of key issues emerged:²¹

- Only a few nations have developed Defence Energy Strategies. This also means that only a few nations have a clear definition of what ‘military energy efficiency’ and/or ‘operational energy’ actually entail.

17 In 2012, during the Rim of the Pacific exercise (RIMPAC), the USN successfully demonstrated the performance of replacement biofuel blends in five of its vessels: the carrier USS Nimitz, the destroyers USS Chafee and USS Chung Hoon, the missile cruiser USS Princeton and the fleet replenishment oiler USNS Henry J. Kaiser (Larsen, *Unfolding*).

18 Larsen, *Unfolding*, 18.

19 SENT, *Smart Energy*, 11.

20 11 NATO countries and two partner nations—according to SENT this essentially reflected the difficulties in acquiring an overview of national efforts on the issue, especially as it was difficult for many countries to provide a single point of contact on smart energy.

21 SENT, *Smart Energy*, 34–59.

- Most national efforts are focused on increasing energy efficiency for domestic defence infrastructure; very few are looking into energy efficiency during operations.
- Most national efforts are focused on land forces, while very few countries have projects related to navies. Numbers are even lower for marines.

Strategic Implications

At the strategic level, it would seem that NATO allied countries, and their navies in particular, are still attempting to find their footing in a rapidly shifting world affected by climate change. The Green Defence Framework is a good starting point for reflection. Yet, to date it has failed to produce a real framework for extended cooperation and best practice exchange on how to ensure that deployed forces can be energy resilient and, at the same time, reduce their harmful effects on the environment.

A cursory glance at the naval industry across NATO members shows that a few steps are being taken, in particular in relation to energy consumption for increased asset autonomy. This is certainly critical for mission survivability but does little to reduce dependency on certain resources such as oil, which are vulnerable to price hikes and volatile geopolitical relations. Research is under way to find alternative fuels that could decrease such dependency and limit budget costs,²² as well as technologies that can reduce the harmful effect of naval assets on ocean ecosystems.²³ But the road ahead remains long.

NATO and Climate Security: A View from the Top

NATO's institutional understanding of climate security as a risk that could trigger an Article 5 response has been slow to develop. The concept of climate change was only institutionalised in the 2010 Strategic Concept for the Defence and Security.²⁴ The document recognises that

22 Larsen, *Unfolding*, 21–30.

23 For instance, although it has drawn much less attention than some bigger energy efficient projects, some navies have taken steps to improve their ballast water treatment to avoid them having a harmful impact on local marine ecosystems.

24 Rickard Söder, “*NATO in a climate of change*”, SIPRI, 14 February 2020. <https://www.sipri.org/commentary/blog/2020/nato-climate-change>.

“Key environmental and resource constraints, including health risks, climate change, water scarcity and increasing energy needs will further shape the future security environment in areas of concern to NATO and have the potential to significantly affect NATO planning and operations.”²⁵

Yet it took nearly another decade for NATO to start defining its own role in addressing climate security challenges. In 2016, NATO’s Secretary General Jens Stoltenberg was still reportedly commenting that “NATO is not a first responder to climate change”, and consequently “the most important things that can be done with climate change are more related to energy, to ministers of the environment, to other areas than defence”.²⁶ This is in stark contrast to Stoltenberg’s more recent (virtual) address at the University of Copenhagen in September 2020,²⁷ where he stated that NATO should be concerned with climate change because it makes the world more dangerous, it makes it harder for military forces to keep people safe, and because NATO has a responsibility to combat climate change.²⁸

Nevertheless, if NATO as an organisation has found it quite difficult to take concrete steps in addressing climate security, allied navies, on the other hand, have been taking active steps at capability and strategic levels. And while it is not within the realm of this chapter to analyse the actions of all 30 member countries, the following subsections provide a few examples of action taken by NATO navies at the individual and regional levels to tackle climate security.

25 NATO, ‘Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation’, NATO (2010), 13.

26 ‘Politico Brussels playbook cocktails with Jens Stoltenberg’, POLITICO, 6 June 2016, cited in Niklas Bremberg, “European Regional Organisations and Climate-Related Security Risks: EU, OSCE and NATO”, *SIPRI Insights on Peace and Security*, No. 2018/1, 11.

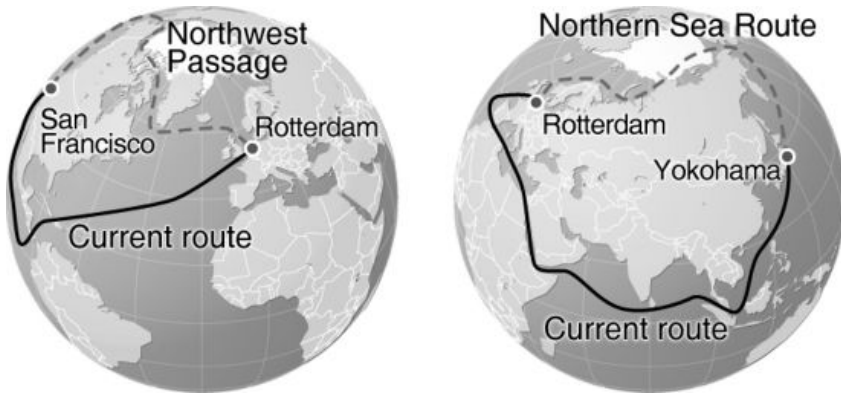
27 Jens Stoltenberg, “NATO and the security implications of climate change—Virtual speech by NATO Secretary General Jens Stoltenberg”, NATO, 28 September 2020.
https://www.nato.int/cps/fr/natohq/opinions_178355.htm?selectedLocale=fr

28 This reflects the significant rhetorical steps also taken during the NATO Engages Summit in London in December 2019.

The Arctic: Competition in the Air

The Arctic has been warming up at an alarming pace in the past decade. The sea-ice extent²⁹ continues to reach new record lows, December 2020 being the third lowest on satellite record.³⁰ This has opened up new ways of accessing its rich mineral seabed. It has also resulted in the two key regional passages, the Northern Sea Route³¹ (NSR) and the North-West Passage,³² becoming navigable for longer periods of the year (Figure 1).

Figure 1 —Arctic Shipping Routes



Source: European Space Agency (ESA)

While these routes, for the time being, are far from being able to accommodate the maritime trade that would significantly save time and costs for a number of trade actors in the region, they have already become a main point of contention:³³

- Russia and Canada consider the NSR and the North-West Passage to be national waters and would seek to charge revenue for maritime passage

29 **Sea ice extent** is a measurement of the area of **ocean** where there is at least some **sea ice**. Usually, scientists define a threshold of minimum concentration to mark the **ice edge**; the most common cut-off is at 15 per cent (National Snow and Ice Data Centre—NSIDC).

30 NSIDC, “Arctic Sea Ice News and Analysis”, accessed 18 January 2021. <http://nsidc.org/arcticseaicenews/>.

31 Runs along the coast of the Eurasian.

32 Links the Atlantic to the Pacific Ocean through Canadian islets.

33 IMCCS, “The World Climate and Security Report 2020”, 29.

once the routes become navigable for longer periods in the year. To the US and other regional players, these claims are unacceptable.

- The NSR has the potential to reduce Chinese maritime trade to Europe by 15 days in comparison to the current route via the Strait of Malacca and the Suez Canal. China's 2018 first Arctic Policy highlights very clearly the country's ambitions for a Polar Silk Road in the region.
- Multiple territorial claims have been filed with the Commission on Arctic Shelves of the United Nations Convention of the Law of the Sea (UNCLOS), with Canada, Denmark and Russia having the most extensive claims.

UNCLOS verdicts on the continental shelf extensions claims are not out yet, and the price of developing the appropriate technologies to extract natural resources from the Arctic is still too high compared to the revenue that can be derived from them. Conflict, therefore, is far from imminent in the Arctic region, yet a number of regional allied navies have been renewing some key assets in their fleets.

This is notably the case for Norway, who has been looking at increased Russian activity around Svalbard with particular attention: by 2011 the Royal Norwegian Navy had already replaced five small frigates with five larger frigates equipped to fight anti-air, anti-submarine and anti-surface warfare;³⁴ it will also be replacing its submarines soon. Less concerned about security threats than its Scandinavian neighbour,³⁵ the Royal Danish Navy has acquired ice-strengthened Offshore Patrol Vessels³⁶ (OPV) as well as new helicopters³⁷ for its frigates in order to monitor potential activity in the area. In North America, in a bid to increase its presence in the Arctic, the Royal Canadian Navy signed a contract in 2015 for five 'Harry DeWolf' class Arctic Ocean Patrol Vessels (AOPV).

34 Alix Valenti, 'Fire and Ice—Naval Build-Up in the Arctic', *Naval Forces*, No. IV (2018), 51.

35 Talking to the author in 2018, Rear Admiral Nils Wang, then Director of Naval Team Denmark and Commandant at the Royal Danish Defence College said: "The Arctic region has been prioritised, with a government focused on Arctic issues and challenges; however, this does not stem from the Danish perception that there is a threat against its territories.", *ibid*.

36 Two 'Knud Rasmussen' class to replace the ageing 'Agdlek' class, which are capable of breaking 40cm sea ice and have a range of 5600km, *ibid*.

37 Nine Seahawk helicopters from the USN—these helicopters will be able to carry out anti-surface and anti-submarine warfare, *ibid*.

Indo-Pacific: Between HA/DR and Strategic Interests

The Indo-Pacific region may appear geographically unrelated to NATO, yet it is home to five of the 12 French overseas territories,³⁸ two United Kingdom overseas territories³⁹ and a large number of US Pacific territories.⁴⁰ These overseas territories allow these NATO members to lay sovereign claims to Pacific and Indian Ocean waters; they also represent a significant responsibility in terms of protection.

The Indo-Pacific region is the world's most disaster-prone region.⁴¹ A large number of Pacific⁴² and Indian Ocean islands are at risk of being submerged in the coming years if the sea level continues to rise as it has over the past decade.⁴³ They are also highly vulnerable to extreme weather events.⁴⁴ Finally, fish stocks are being driven away from the coasts⁴⁵ as a result of coral bleaching. These trends have three significant impacts on climate security in the Indo-Pacific region:

- Depleted regional fish stocks are driving up illegal, unreported, unregulated (IUU) fishing, the most recent figures estimating the value of tuna

38 Mayotte and La Réunion in the Indian Ocean; Wallis et Futuna, French Polynesia and New Caledonia in the Pacific Ocean.

39 British Indian Ocean Territory in the Indian Ocean; Pitcairn Islands in the Pacific Ocean.

40 Midway Island, Hawaiian Islands, Northern Marian Islands, Guam, Wake Island, Howland and Baker Island, American Samoa, Jarvis Island, Johnston Island, Palmyra Atoll and Kingman Reef.

41 IMCCS, "The World Climate and Security Report 2020", 42.

42 Kiribati, for instance, is barely two metres above sea level at its highest point (IMCCS, 2020, 46).

43 Since 1993, the sea level has been rising at an average of 3.29 mm per year, peaking in 2020.

WMO, "State of the Global Climate 2020 – Unpacking the Indicators", 14 January 2021.

<https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate>.

44 In 2019 five cyclones built-up over the Indian Ocean.

EUMETSAT, "Active Indian Ocean tropical cyclone season", accessed 19 January 2021.

<https://www.eumetsat.int/active-indian-ocean-tropical-cyclone-season>.

45 Coral reefs only occupy 0.1% of the world's oceans but they support 25% of all marine species on the planet. Coral bleaching is therefore also likely to further deplete fish stocks as marine ecosystems are disrupted. WWF, "What are the main threats to coral reefs?", accessed 19 January 2021. https://wwf.panda.org/discover/our_focus/oceans_practice/coasts/coral_reefs/.

and tuna-like products lost to illegal trans-shipments at \$142 million each year.⁴⁶

- Populations living in areas prone to extreme weather events, such as typhoons, cyclones and flooding, are being displaced to other areas or countries. This potentially creates tensions over resources, which could become sources of conflict.
- Some populations may not wish to move away from their homes or hometowns, exposing themselves to recurrent climate-related disasters.

As a consequence, all three countries have blue water navies that include capabilities designed to defend their interests and deliver HA/DR in regions as far from home as the Indian Ocean and the Pacific.

If we look more specifically at France, the French EEZ in the Indian Ocean represents 25% of the country's total EEZ (see Figure 2). The French Navy therefore plays a significant role in protecting national interests in the region. It has three naval bases in the region—in Djibouti, La Reunion and Abu Dhabi⁴⁷—from which ships are regularly deployed to protect Sea Lines Of Communication (SLOC). SLOCs may appear disconnected from the issue of climate security; in reality, as noted by the French Naval Centre for Strategic Studies (CESM) in its 2016 report on 'Naval ambition in the 21st century':

"The sea determines the economic future of our country, of Europe and of mankind: three quarters of the world population live within 500km of the coast, potentially large quantities of ocean resources are mostly untapped while those of the earth are exhausted. Moreover, 90% of our globalised economy relies on maritime transport security and 95% of our intercontinental digital communications passes through submarine cables."⁴⁸

46 MRAG Asia Pacific in S. Widjaja, T. Long, H. Wirajuda et al., "Illegal, Unreported and Unregulated Fishing and Associated Drivers", (Washington, DC: World Resources Institute 2019). Available online at www.oceanpanel.org/iuu-fishing-and-associated-drivers.

47 Bastien Alex, Alice Baillat and François Gemenne, 'Rapport d'Etude n°10: Changements climatiques et enjeux de defense dans l'océan Indien occidental', (IRIS/IFRI 2019), 32.

48 CESM, 'Ambition Navale au XXI^e siècle', (CESM, 2016), Hors Série, 15.



In the Indian Ocean, the French Navy is also seeking to provide support to authorities in Mayotte in their fight against illegal migration from the Comoros. Finally, at a more general level, the French Navy is seeking to establish good cooperation with regional countries and powers around the concept of ‘Blue Economy’.⁵⁰ ‘Blue Economy’ covers all economic activities related to oceans, seas and coasts⁵¹—all activities related to climate security.⁵²

On the Pacific front, regional waters are home to 40% of France’s EEZ;⁵³ it represents an invaluable strategic asset by way of its position and the natural resources lying in its seabed. Aside from patrolling the waters to protect national sovereignty, the French Navy also seeks to develop missions to fight against illegal trafficking and other activities in the region.⁵⁴ As Chinese fishing activity continues to grow in the region⁵⁵ (Figure 3), France is growing increasingly attentive to what is happening in its regional territorial waters. The French Navy also stands ready to cooperate with regional actors in their efforts to provide HA/DR where needed.

49 <https://twitter.com/MarineNationale/status/966305311668699136/photo/1>,

50 *ibid.*, 37.

51 European Commission, ‘What is the Blue Economy’, accessed 19 January 2021. https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/publications/what-is-the-blue-economy_en_1.pdf.

52 Aquaculture, fishing, coastal tourism, maritime transport, coastal and environmental protection, to name a few, *ibid.*

53 The total French EEZ encompasses 11 km², and the French overseas territories in the Pacific represent a total of 4.5 km² of EEZ (approximately 40%).

Vie Publique, ‘Mers et océans: les espaces maritimes en six questions’, accessed 19 January 2021.

<https://www.vie-publique.fr/questions-reponses/274664-mers-et-oceans-les-espaces-maritimes-en-six-questions>.

54 CESM, ‘Ambition Navale au XXI^e siècle’, 39.

55 FAO, ‘Fishery Statistical Collections – Global Capture Production’, queried 19 January 2021.

www.fao.org/figis/servlet/SQServlet?file=/usr/local/tomcat/8.5.16/figis/webapps/figis/temp/hqp_6048625640213625301.xml&couttype=html.

Figure 3 —Chinese fishing statistics in the South-West and South-East Pacific Ocean

Capture: Quantity (t)

Display Land Area: <input type="text" value="All"/> <input type="button" value="ok"/>		<input type="button" value="EXPORT"/>							
Land Area	Ocean Area	2011	2012	2013	2014	2015	2016	2017	2018
China	Pacific, Southeast	283 619	274 921	274 353	359 552	357 742	251 566	332 651	379 664
	Pacific, Southwest	3 002	3 518	5 044	5 481	6 748	6 108	7 025	5 347
Total China		286 621	278 439	279 397	365 033	364 490	257 674	339 676	385 011
Grand total		286 621	278 439	279 397	365 033	364 490	257 674	339 676	385 011

Source: FAO—Fisheries and Aquaculture Information and Statistics Branch: Interrogated on 25/01/2021.

As noted earlier, the French Navy is not the only regional actor with an increasing presence in the Indo-Pacific region. By way of its extensive EEZ in the Pacific Ocean, the USN also regularly patrols those waters to protect both its national interests and freedom of navigation. A report published by the Centre for Naval Analysis (CNA) in 2007 already noted that, “climate change threats also create opportunities for constructive engagement such as stability operations and capacity building”.⁵⁶ In the region, the USN cooperates extensively with its partners, especially Australia, on security issues; although the majority revolve around warfare, exercises like the Rim of the Pacific (RIMPAC) have also increasingly included training focused on the Blue Economy as well.

The presence of these two NATO countries in the far waters of the Indo-Pacific presents the alliance with significant potential. Leveraging cooperation programmes and exercises between France, the USN and their regional partners, NATO could strengthen old alliances and build new ones around the concept of climate security.

NATO’s Window of Opportunity in a Changing Climate

NATO has been very slow in institutionalising the concept of climate change. Today still, the alliance has taken no concrete steps to address the impact of climate change on international security. Undoubtedly, part of the issue lies in rhetoric. ‘Climate change’ is a controversial concept, a reef

⁵⁶ CNA, ‘National Security and the Threat of Climate Change’, (CNA 2007), 39.

that sees many conversations stranded around the debate of man-made versus not man-made. NATO has been no exception to this pitfall.

Yet, the introduction of the concept of ‘climate security’ in the mid-2010s may well have played a significant role in reshaping institutional mindsets in the last few years. It shifted the debate away from the root causes of climate change to focusing, instead, on the effects of climate-related disasters on international security. The relationship between the devastating effects of warming oceans—on coral reefs, rising sea levels and weather systems—and human insecurity is much easier to agree upon.

Allied navies could be key enablers in supporting NATO’s transition towards a more defined agenda on tackling climate security. Over the past three decades, allied blue water navies have been “called to respond to a wide range of natural or man-made threats that have little or nothing to do with questions of war or peace”.⁵⁷ Progressively, they have played a significant role in protecting populations and national interests well beyond the North Atlantic region. For instance, as discussed in this chapter, through close cooperation with regional partners in the Indian and Pacific Oceans, the French and US navies are contributing to a wide range of missions that aim at protecting national interests against the effects of climate insecurity—protection of SLOCs crucial to maritime trade, action against IUU fishing and illegal migration, to name but a few.

These non-military responsibilities “break the traditional mould regarding what most people think are navies’ primary duties”.⁵⁸ Through their actions on climate security, they have become an essential instrument of soft power. As noted by Bastien, A., Baillat, A. and Gemenne, F. (2019), cooperation around the notion of a Blue Economy could create windows of opportunity for regional dialogue with unexpected regional actors.⁵⁹ In the Indian Ocean, for instance, China has become a logical player and a potential partner for HA/DR; “it would be a good way to engage in a constructive dialogue with China in relation to its role in the Indian Ocean”.⁶⁰ Similarly, a more clearly defined ‘Green Defence Framework’ could sup-

57 Bruce E. Elleman and S.C.M. Paine, ‘Introduction: Navies Are Not Just for Fighting’, in *Navies and Soft Power: Historical Case Studies of Naval Power and the Nonuse of Military Force*, ed. Bruce E. Elleman and S.C.M. Paine, (Naval War College Press 2015), 1.

58 Ibid, p.2.

59 Alex, Baillat and Gemenne, ‘Rapport d’Etude n°10, 32.

60 Ibid.

port navies in using soft power to form research partnerships seeking to reduce the harmful effects of naval assets on marine life.⁶¹

A soft power approach built around the notion of Blue Economy may not be easily implemented. In regions where climate security meets the resurgence of great power competition, building naval cooperation towards common goals may prove challenging.⁶² For instance, navy modernisation programmes that have been taking place in the Arctic amidst contentious sovereignty claims, Russia's more assertive behaviour and China's increased interest in the region presage everything but a sense of peaceful trust. Similarly, other regions that could not be discussed in this chapter—such as the Mediterranean⁶³—may also suffer from tensions related to resource competition between NATO members. But, as Elleman, B. and Paine, S.C.M. (2015) note⁶⁴:

“Many navies and coastguards cooperate with those of other countries to conduct these missions because all nations share a common interest in safe transit and healthy fisheries.”

If NATO plays its cards well and defines more clear strategic goals within the notion of climate security, it may have more solid ground on which to build cooperation with nations around the world. And what is currently a relentless hazard may, in the end, have a silver lining.

61 Darlene R. Ketten, 'Naval Sonars, Strandings, and Responsible Stewardship of the Seas', in *Navies and Soft Power: Historical Case Studies of Naval Power and the Nonuse of Military Force*, edited by Bruce E. Elleman and S.C.M. Paine, (Naval War College Press 2015), 127.

62 The IMCCS (2020, p.30) report highlights the difficult relations between countries with competing continental shelf claims and who sit at the same regional institutional table. Notably, this is the case with Russia and the Arctic Panel.

63 The Mediterranean region and the black sea are currently disrupted by regional conflicts, resources competition, illegal trafficking and illegal migration (CESM, 2016, 35).

64 Bruce E. Elleman and S.C.M. Paine,, 'Conclusion: Breaking the Mold', in *Navies and Soft Power: Historical Case Studies of Naval Power and the Nonuse of Military Force*, edited by Bruce E. Elleman and S.C.M. Paine, (Naval War College Press 2015), 181

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Non-State Actors, Piracy and Threats to Global Shipping

Dirk Siebels

Introduction

The relationship between naval forces and commercial shipping companies has long been complicated. Naval operations are hugely different from the day-to-day trading patterns of merchant ships, and few naval officers receive any information about the shipping industry as part of their training.

At the same time, such knowledge is increasingly important for a thorough understanding of the maritime environment. The number of merchant ships will continue to grow in the coming years, yet there are no indications of a similar increase in the number of naval assets. Surveillance capacities can be enhanced by technical assets, ranging from coastal radar stations to unmanned patrol aircraft. Data gathered on specific platforms, however, requires thorough analysis to distinguish irregular events from everyday occurrences, such as trading patterns of merchant ships.

This article shows why the vulnerabilities of commercial shipping should be considered a strategic issue for NATO. The first two sections explain the differences between knowing and understanding how the shipping industry in general and merchant ships in particular conduct day-to-day operations. The next section looks at the impact of various threats to commercial shipping. Finally, the article underlines why these threats are a strategic concern for NATO navies and explains the limited amount of interaction between them and the global merchant fleet.

MSA and MDA—differences between knowledge and insights

Knowing and understanding what happens at sea is crucial for NATO as well as for most of its member states. Maritime connections across the North Atlantic are the backbone of the alliance, and NATO forces are frequently involved in maritime operations. Given the sheer number of vessels that are part of the commercial shipping industry, it seems obvious

that naval officers should know at least the basic details about their operations.

There is, however, a considerable difference between mere knowledge and actual understanding. This can be highlighted by differences between maritime situational awareness (MSA) and maritime domain awareness (MDA). Both terms are sometimes used as synonyms, largely due to the fact that many organisations use their own definitions for MSA or MDA.

Arguably the most relevant definition for maritime domain awareness has been provided by the International Maritime Organization (IMO), the United Nations agency responsible for the safety and security of global shipping. The IMO defines MDA as the 'effective understanding of anything associated with the maritime domain that could impact security, safety, the economy or the marine environment'.¹

Before reaching an 'effective understanding', it is necessary to know as much as possible about what is actually happening at sea. Where are ships located, where have they come from and where are they going? Are their movements completely normal or is it possible to identify suspicious patterns? Finding answers to such questions requires a good level of MSA which combines different technical platforms. Merchant ships, for example, can be tracked through their AIS signals, coastal radar stations or space-based surveillance systems.

Not every country is able to employ the same structure. Nevertheless, the basic principle remains the same: MSA means knowing as much as possible about what is happening at sea. Raw data must then be analysed and assessed to understand these events and therefore to reach a good level of MDA. Given the sheer number of vessels that are operating in many regions around the globe, MSA is already a formidable challenge for national authorities. It is simply impossible to know everything about the movements of local cargo ships, small fishing vessels or pleasure craft at the same time.

From a NATO point of view, however, these smaller vessel types are only relevant for specific operations in a particular region. It is much more important to have an understanding of commercial vessels in international trade. According to the United Nations Conference on Trade and Development, more than 98,000 such ships were registered around the world in

1 International Maritime Organization, "Enhancing maritime domain awareness in West Indian Ocean and Gulf of Aden", *IMO Latest News*, 14 November 2018, <https://imo.org/en/MediaCentre/Pages/WhatsNew-1203.aspx>.

2020, an increase of more than eight per cent since 2015.² By comparison, the US Navy currently plans to have 355 ships in active service by 2034,³ yet there are already questions around potential personnel shortages. Moreover, naval planners have to take into account that only 30 to 40 per cent of all vessels are operational at any given time, a significant difference from commercial ships, which have a much higher operational availability.

Understanding the shipping industry

Knowing details about the actual number of commercial ships is not enough. Understanding at least some basic details about commercial shipping is equally important. That is highlighted by the role of NATO and individual member states in counter-piracy operations or the enforcement of arms embargoes, as well as by the day-to-day analysis of events in areas of strategic interest for the alliance.

Unfortunately, many naval officers tend to look at the 'shipping industry' as one coherent actor. This view fails to acknowledge vast differences between publicly listed companies operating hundreds of vessels and family-owned businesses which own just a handful of tankers or bulk carriers. It also fails to take different types of companies into account. Some shipping companies own and operate their ships, other owners merely use them as a financial investment and rely on specialised ship managers.

These are just some aspects that are vital for an understanding of the shipping industry overall and the challenges that industry stakeholders are facing. Furthermore, different tiers can be identified as some shipping companies are much keener to avoid security threats than others. That is underlined by the fact that many commercial ships in the Indian Ocean or the Gulf of Guinea still operate without visible security measures, which

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- 2 UNCTAD Stat, "Merchant fleet by flag of registration and by type of ship, annual – Number of ships", accessed 14 January 2021, <https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=93> (figures include merchant ships of 100 gross tons and above).
 - 3 David B. Larter, "In a quest for 355 ships, US Navy leaders are unwilling to accept a hollow force", *Defense News*, 13 January 2020, <https://www.defensenews.com/digital-show-dailies/surface-navy-association/2020/01/13/in-a-quest-for-355-ships-us-navy-leaders-are-unwilling-to-accept-a-hollow-force/>.

are recommended as best management practices by industry organisations.⁴

Achieving a better understanding of commercial shipping would help NATO's naval forces to enhance MDA. This would provide an extremely useful background for politicians and strategic planners to determine which capabilities are required in the medium to long term, and to execute specific operations in the short term. When it comes to enforcing an embargo, for example, it is vital to understand the normal patterns of maritime traffic in the respective region. It is then possible to identify irregular patterns that should be investigated further, possibly even leading to examples of opposed boarding of non-compliant merchant vessels.

Commercial shipping faces different types of threats

The previous section has outlined some benefits of a better grasp of commercial realities in the shipping industry for NATO's own operations. At the same time, such insights would help NATO to recognise and address certain vulnerabilities of commercial shipping. In the past, these have often been ignored as NATO members have concentrated on core naval tasks. More recently, however, threats to commercial shipping and to the security of vital shipping routes have developed into more strategic concerns.

Operation Ocean Shield, aimed at countering Somalia-based piracy, was arguably the first large-scale NATO operation largely aimed at protecting commercial shipping. Many NATO members contributed naval assets to the operation between 2009 and 2016. Another NATO operation (Unified Protector), conducted in 2011, was aimed at enforcing the arms embargo around Libya during the civil war in the country. To address concerns from shipping industry organisations, NATO representatives stressed that

4 At the time of writing (January 2021), the most recent guidance documents were "BMP5: Best Management Practices to Deter Piracy and Enhance Maritime Security in the Red Sea, Gulf of Aden, Indian Ocean and Arabian Sea" for operations in the western Indian Ocean (https://www.maritimeglobalsecurity.org/media/1038/bmp5-high_res.pdf) and "BMP West Africa: Best Management Practices to Deter Piracy and Enhance Maritime Security off the Coast of West Africa including the Gulf of Guinea" for operations off West and Central Africa (<https://www.maritimeglobalsecurity.org/media/1047/bmp-wa-hi-res.pdf>).

they were 'working to ensure that shipping in the Mediterranean [...] is not disrupted'.⁵

While cooperation between shipping companies and naval forces—both on the national and the NATO level—has somewhat improved in the recent past, the relationship remains arduous. Industry organisations tend to present themselves as speaking for the entire shipping industry, even though they generally represent the interests of a specific subset of owners and operators. Finding common ground for discussions is therefore often complicated.

Even when commercial shipping operations are subject to specific threats, these may have distinctive implications on the company level. Some shipping companies, for example, have been deterred by insecurity in Libya and have refused to call at Libyan ports and terminals since the fall of the Gaddafi regime in 2011. For other companies, however, relatively high-risk levels have created business opportunities, allowing them to charge higher rates from charterers which were more than enough to cover the costs of specific mitigation measures.

Some merchant vessels have even been involved in illegal fuel imports or other types of smuggling to ports in Libya. By and large, these ships are not operated by reputable companies. Nevertheless, they are part of the shipping industry, indicating once again that it is not merely one monolithic actor.

The situation in other countries and regions is similar. Many shipping companies may be subject to threats, while others are complicit in illicit operations. Unauthorised fuel transfers at sea or illegal transshipments of catches from industrial fishing vessels to refrigerated cargo ships are two prominent examples. These are particularly likely to occur where coastal countries have limited capacities to enforce laws and regulations at sea.

Overall, the complicated web of actors in the private sector makes discussions about different types of threats and how they affect commercial shipping complicated. After all, industry organisations often present contrasting opinions and suggestions which are largely based on their membership structure. For example, the Baltic and International Maritime Council (BIMCO) is 'the world's largest direct-membership organisation for shipowners, charterers, shipbrokers and agents'.⁶ Nevertheless, BIMCO

5 NATO, "NATO to Minimize Impact of Libyan Operation on Merchant Shipping", *Offshore Energy*, 23 June 2011, <https://www.offshore-energy.biz/nato-to-minimize-impact-of-libyan-operation-on-merchant-shipping/>.

6 BIMCO, "About us and our members", accessed 14 January 2021, <https://www.bimco.org/about-us-and-our-members>.

only represents around 60% of the world's merchant fleet, which is measured by deadweight tonnage.

The International Chamber of Shipping (ICS) is even larger, representing more than 80% of commercial ships worldwide. However, ICS membership 'comprises national shipowners' associations'⁷ rather than individual companies. Other industry organisations have less diverse membership. Examples include OCIMF or Intertanko, which both focus on specific segments of tanker owners, or Intercargo, which represents shipping companies that own bulk carriers.

Furthermore, naval officers must realise that there are virtually no existential security threats to commercial shipping overall, even though they may be significant for specific types of infrastructure, e.g. crude oil and LNG terminals, or individual companies. Somalia-based piracy provides a perfect example. Frequent hijackings of merchant ships were often described as a threat to 'freedom of navigation and the flow of commerce'.⁸ At the same time, even at the height of Somali piracy between 2009 and 2011, thousands of ships continued to sail through the western part of the Indian Ocean every year, and commercial shipping in the area was far from coming to a standstill. The same has been true for other regions with substantial numbers of recorded piracy attacks, such as parts of South East Asia or the Gulf of Guinea.

Piracy, however, represents merely one type of security threat to commercial shipping, namely those that are driven by profits. It is comparatively easy to identify drivers behind such threats and implement mitigation measures to minimise the risk. Other threats, such as potential attacks by terrorist or state-affiliated groups, are another factor to consider. More often than not, the probability of such incidents occurring is very low. Nevertheless, the risk level may be notable due to the potentially severe consequences—merchant ships are simply not constructed to withstand

7 International Chamber of Shipping, "About ICS", accessed 14 January 2021, <https://www.ics-shipping.org/about-ics/>.

8 James Caponiti, "The Ongoing Piracy Problem in the Waters off of Somalia", U.S. Department of Transportation, 5 May 2009, <https://www.transportation.gov/testimony/ongoing-piracy-problem-waters-somalia>.

the impact of waterborne improvised explosive devices⁹ or limpet mines attached to the hull¹⁰.

As mentioned above, even high-risk levels are generally not enough to deter all commercial shipping. Some companies may in fact be attracted by profitable opportunities that arise when others avoid a specific region altogether. This often seems counter-intuitive to naval officers, yet it is a reality in the private sector.

Aside from physical security threats, potential cybersecurity breaches have also received a lot of attention in recent years. While the actual threats are new and constantly developing, the underlying structure with which to assess and mitigate the associated risks remains the same. Moreover, similar to more traditional threats, cyberattacks are not an existential threat to commercial shipping overall, even though that may look very different for both individual companies and operators of infrastructure such as ports or specific terminals.

Much has been made of scenarios that involve hackers obtaining information about valuable cargoes before sending 'traditional pirates to board the vessel (...) and locate what they are looking for'.¹¹ However, there is no evidence behind this or similar headline-grabbing warnings. And when 'you begin to dig into the logistics of such a criminal enterprise, it quickly falls apart'.¹² It would be much more important to gather information about actual attacks to identify trends, the motivations of different actors as well as potential vulnerabilities. However, most organisations have very little interest in sharing information about actual or even attempted attacks until there is a major impact,¹³ a problem that the maritime sector has in common with virtually all other sectors.

9 "Anatomy of a 'drone boat'", Conflict Armament Research, December 2017, <https://www.conflictarm.com/perspectives/anatomy-of-a-drone-boat/>.

10 Sandra Petersmann, "Tanker attacks in the Gulf — evidence or warmongering?", *Deutsche Welle*, 21 June 2019, <https://www.dw.com/en/tanker-attacks-in-the-gulf-evidence-or-warmongering/a-49295596>.

11 Nicholas Newman, "Cyber pirates terrorising the high seas", *Engineering & Technology*, 18 April 2019, <https://eandt.theiet.org/content/articles/2019/04/cyber-pirates-terrorising-the-high-seas/>.

12 David Rider, "Maritime meets cyber security", *The Maritime Executive*, 16 October 2019, <https://www.maritime-executive.com/blog/maritime-meets-cyber-security>.

13 This was highlighted, for example, during a cyber security conference in 2019, held at the NATO Maritime Interdiction Operational Training Centre. A comprehensive summary of the conference can be found at: https://nmiotc.nato.int/wp-content/uploads/2020/01/3000-NSC-74_NU120_02-08-19_NMIOTC-2019-cyber-security-FFT-Paper.pdf.

Strategic issue for NATO?

The previous sections have shown that a good understanding of commercial shipping is vital for navies to achieve comprehensive maritime domain awareness. At the same time, day-to-day operations in the private sector are considerably different from those conducted by navies, making it hard for naval officers to understand how particular threats affect commercial shipping.

Whether—and how—maritime crime should be reflected in strategic documents and thinking is therefore a far-reaching question. Moreover, it is far from easy to conceptualise criminal activities in the maritime environment. One recently published article¹⁴ has attempted to introduce the concept of 'blue crime' to cover various illegal activities at sea. Despite the catchy title, the authors failed to provide a theoretical foundation for their ideas. Nevertheless, it is vital to recognise intersections between a broad array of criminal activities, both on land and at sea. These are crucial for a thorough analysis of specific crimes and an evaluation of their relevance for commercial shipping.

As explained above, not even a large number of pirate attacks in a strategically important region such as the western Indian Ocean constitutes an existential threat to overall shipping operations. However, maritime trade is irreplaceable, even for landlocked countries. Within NATO, this is often acknowledged in discussions related to maritime security, meaning that 'the maritime domain is of strategic importance for NATO'¹⁵. In the context of specific threats to commercial shipping, the crucial role of secure shipping routes—and other maritime infrastructure—provides a powerful political argument, for example during debates on the future role of navies.

From an operational point of view, threats to commercial shipping may be linked to other maritime security issues, yet they are generally region-specific. Even threats such as smuggling or illegal, unreported and unregulated fishing—which are issues for many governments worldwide—have to be addressed in specific ways. Regional resources and capacities are not the same everywhere. Joint operations or other forms of partnerships be-

14 Christian Bueger and Timothy Edmunds, "Blue crime, Conceptualising transnational organised crime at sea", *Marine Policy*, vol. 119 (September 2020).

15 NATO, "NATO's maritime activities", accessed 14 January 2021, https://www.nato.int/cps/en/natohq/topics_70759.htm.

tween regional and NATO navies can therefore not fit into a one-size-fits-all blueprint.

On the part of the alliance, it is extremely useful to understand patterns of life in defined regions and how these relate to commercial shipping. That involves direct attacks against merchant ships, but also other illicit activities and whether these are linked to specific threats. Building up such knowledge over time provides a foundation for future operations in each respective area, even if no such operations are expected to occur. The development of Somali piracy from an issue with mainly local impacts to an escalating threat to merchant ships in international trade within a few months is a classic example of a situation that required a quick response.

Areas of strategic concern to NATO, such as the Mediterranean or the North Atlantic, should be analysts' main focus. However, the global nature of commercial shipping means that it is useful to monitor other parts of the world where shipping companies face security threats. That includes regions such as South America or South East Asia, but also the Gulf of Guinea, which has received a lot of media and political attention in the recent past due to increasing concerns about kidnappings of seafarers from ships in that region.

NATO does not have a strategic interest in either of these regions, yet it is useful to remain up-to-date with threat developments as these could occur in a similar form elsewhere. That includes diverse—and non-traditional—security threats with potential impacts on commercial operations, ranging from irregular migration on maritime routes to spoofing of navigational systems. Regional responses to such threats may not be easily transferable to other areas. However, they can provide valuable lessons and case studies.

Links between NATO and commercial shipping

While links between NATO and the shipping industry must become closer to address the concerns mentioned above, the fundamental infrastructure has long been in place. For example, the NATO Shipping Centre is the 'primary point of contact for the exchange of merchant shipping information between NATO's military authorities and the international shipping community'.¹⁶ In practice, links are also strengthened by frequent exercises

16 NATO Shipping Centre, "About", accessed 14 January 2021, <https://shipping.nato.int/nsc/about>.

for NCAGS¹⁷ personnel, allowing merchant navy officers to serve as naval officers for short periods.

Unfortunately, interactions between navies and the private sector in the maritime environment remain limited. Both on the personal and the institutional level, this often leads to a lack of knowledge about broader industry concerns and even about seemingly basic issues such as differences in trading patterns for various types of vessels.

Such problems are regularly pointed out in discussions between naval officers and industry representatives. In the past, this has complicated day-to-day interactions, for example efforts to counter Somali piracy. Almost from the beginning of the NATO operation in the Indian Ocean, the alliance offered protection for convoys of merchant vessels, 'only to realise that operators would rather run the risk of a pirate attack than losing money by having their ships spend more time at sea'.¹⁸

In the context of this particular operation, coordination was addressed by dedicated meetings and reporting centres. However, the overall lack of ongoing cooperation remains an issue, exacerbated by frequent personnel changes on the military side. Officers rarely stay in a particular post for more than three years and for an even shorter time in an operation. It is therefore vital to improve institutionalised cooperation between NATO navies and the shipping industry.

Officer exchanges, which are common practice between navies, are one potential way to achieve this. In addition, the curriculum of relevant courses should be updated to include at least some lectures about the operations of shipping companies in general and merchant vessels in particular. These will not be enough to turn naval personnel into experts on commercial shipping, yet such lessons would allow for more lateral thinking about security challenges at sea and their potential impact.

17 The abbreviation stands for *Naval Cooperation and Guidance for Shipping*. NCAGS is supposed to be an interface between commercial shipping companies and navies; the NATO Shipping Centre provides a comprehensive introduction to the concept: "NCAGS Guide to Owners, Operators, Masters and Officers", accessed 14 January 2021, <https://shipping.nato.int/nsc/page14865015.aspx>.

18 Dirk Siebels, *Maritime Security in East and West Africa: A Tale of Two Regions* (London: Palgrave Macmillan, 2020), 5.

Summary

Monitoring commercial shipping is a key part of maritime situational awareness. Any comprehensive analysis also requires knowledge of regular trading patterns, as well as an understanding of specific threats and their impacts on these patterns. Vulnerabilities of commercial shipping operations are therefore an issue that should receive more attention from NATO navies.

Furthermore, navies throughout the alliance are already having to deal with an increasing number of constabulary tasks on top of their traditional roles and operations. At the same time, governments around the world are facing revenue shortfalls and have shifted their spending priorities due to the economic impact of measures to curb the spread of Covid-19. Naval planners are therefore having to provide additional arguments to secure funding for operational and procurement budgets.

By and large, security is unlikely to be perceived as an end in itself by politicians. Justifying a relatively expensive navy will be much easier when the navy's role in combating maritime security concerns can be highlighted. In this context, commercial shipping is a vital recipient which benefits from better governance and law enforcement capacities at sea.

This has been underlined by the industry's willingness to cooperate and coordinate activities with naval forces when faced with concrete threats, e.g. piracy off Somalia or in South East Asia. Any shipping company has to earn money while also fulfilling its duty of care obligations towards the crews on their ships. Piracy—as well as other maritime security threats—has an impact on both aspects, creating an incentive for shipping companies to engage directly with navies and other maritime security agencies. Over the past decade, various engagements have helped to build trust on both sides, helping to establish longer-term cooperation instead of ad-hoc groups with the sole aim of reducing specific types of threats within a short time frame.

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Lower End of Maritime Operations: European Union Migrant and Border Control Operations in the Central Mediterranean

John Sherwood

In 2015, the European Union (EU) confronted a seaborne migration of unprecedented proportions. Over 1.8 million people fled Africa and the Middle East for Europe—a number over six times the number of illegal border crossings (both on land and sea) in 2014.¹ The crisis was caused by push factors such as war and poverty as well as pull factors like German Chancellor Angela Merkel's decision in 2015 to open Germany's borders to refugees fleeing war in Syria, Afghanistan and Iraq.

The EU responded by launching several coastguard and naval operations in the Mediterranean. Initially, these migrant operations focused mainly on saving lives at sea but over time evolved into multifaceted efforts designed to combat human trafficking, secure Europe's borders, stop the smuggling of arms and oil, and provide enhanced maritime security for the union. While criticised by the right for "providing a water taxi for illegal immigrants" and by the left for their strategic partnerships with the coastguards of Libya and Turkey (countries with poor human rights records), the operations succeeded in stemming the tide of migration to Europe, and more importantly, strengthened nascent EU security structures, such as Frontex (the European Border and Coast Guard Agency) and the EU Common Security and Defence Policy (CSDP). They have also created a greater sense of European solidarity amongst the many sea services personnel who participated in these operations.

For policymakers in the EU, these operations reveal that coastguards and navies, with cooperation from international partners, can save lives and secure borders even in the direst migration crises. They also underscore the immense challenges of migration operations. On a tactical level, these include the logistical challenges of rescuing and transporting large numbers of migrants in naval vessels; coordination between different states and non-governmental actors; and performing a mission with a multifaceted mandate. On a strategic level, the operations have had to contend with changing mandates and immigration policies; harsh critics in the me-

1 Frontex, General Report, 2014, 3.

dia and in the political sphere; legal and human rights concerns; prickly interactions with foreign militaries and governments; conflicts between the operation's values and the reality of the situation at the deck-plate level; and connecting maritime strategy with broader migration policy initiatives on the shore. Migration operations represent some of the most complex low-end missions a navy will ever confront.

The focus of this paper will be on the crisis in the Central Mediterranean, and operations Triton and Sophia in particular. While the Aegean experienced a greater surge of migration in 2015, the Central Mediterranean route off the coast of Libya was the first and only area to be patrolled by an EU naval force. As such, it is more illustrative of both the various roles naval units can play in migratory operations and some of the pitfalls.

Operation Triton

The origins of the migration crisis in the Central Mediterranean can be traced to the 2011 civil war in Libya. That war created an ungoverned coastline that migrants could use as a launch pad to Europe via the islands of Lampedusa and Malta. By August 2013, the number of migrants reaching Italy and its islands by sea had nearly doubled from a former high in 2011 of 60,000 to over 100,000.² In October 2013, two shipwrecks resulted in the deaths of over 500 migrants.³ These tragedies spurred the Italian government to launch Operation *Mare Nostrum*, a maritime operation designed to “safeguard human life at sea and bring justice to human traffickers and migrant smugglers”. *Mare Nostrum*, a joint operation involving the Italian Navy, Coast Guard and other agencies, saved over 140,000 lives in less than a year, but it was more than a single member state could handle financially.⁴ On 9 October 2014, Italy announced that due to high costs

2 Sylvia Poggioli, “Italy Undertakes Lonely, Expensive Mission to Aid Migrants at Sea,” NPR, 24 August 2014, <https://www.npr.org/sections/parallels/2014/08/12/339881610/italy-undertakes-lonely-expensive-mission-to-aid-migrants-at-sea>, accessed 7 April 2020.

3 Glenda Garelli et al., “Shifting Bordering and Rescuing Practices in the Central Mediterranean Sea, October 2013–October 2015,” *Antipode*, vol. 50, No. 3 2018, 813–821.

4 UNHCR, “So Close yet So Far from Safety: Refugees and Migrants Risking Their Lives at Sea to Reach Europe,” 2014, <https://www.unhcr.org/protection/migration/542c07e39/close-far-safety-2.html>, accessed 9 February 2021.

(more than €9 million a month), it was ending the operation.⁵ Critics of the operation claimed *Mare Nostrum* had encouraged migration, but officers involved dismissed this notion. “The boats will try and make the passage anyway,” explained Italian Rear Admiral Michele Saponaro, “The naval operation ensures that migrants are identified and lives are saved.”⁶ Throughout my research, numerous European coastguard and naval officers made the same argument: naval and coastguard presence in the migration zones promotes orderly migration and saves lives.

The crisis did not end with the conclusion of operation *Mare Nostrum*. By late 2014, significant numbers of migrants continued to attempt to reach Europe by sea. During 2014, EU authorities detected 280,000 crossings, more than twice the previous record set in 2013. The most heavily transited corridor in 2014 was the Central Mediterranean with some 170,000 migrants detected by Frontex, the EU border agency.⁷ To assist Italy and Malta in managing these flows, Frontex launched Joint Operation Triton in November 2014. Triton employed coastguard assets detailed by member states for border surveillance and border control. In contrast to *Mare Nostrum*, search and rescue operations (SAR) were not part of the Frontex mandate. However, several maritime laws obligated Frontex vessels to engage in rescues. These included the 1974 International Convention for the Safety of Life at Sea (SOLAS), the 1979 International Convention on Maritime Search and Rescue (SAR), and Article 98 of the UN Convention on the Law of the Sea (UNCLOS). Under these laws, Triton vessels had to be ready to perform rescues if ordered to do so by the Italian Coast Guard’s Maritime Rescue Coordination Centre (MRCC) in Rome.⁸ Triton’s area of operation (AOR) covered the territorial waters of Italy and Malta, as well as parts of the search and rescue (SAR) zones of both states. Although Triton provided additional SAR capacity for Italy, it did not offer the same range of coverage as *Mare Nostrum* in international waters, which had deployed warships right up to the 12 nautical maritime borders of Libya. A significant sea gap existed between Libyan territorial waters and the beginning of the Triton SAR zone.⁹

5 Gian Lorenzo Zichi, “European Fleet to address the Migration Challenge in the Mediterranean? The EUNAVFOR MED/Sophia between Lights and Shadows,” *Athens Journal of Mediterranean Studies*, Volume 4, Issue 2, 137–156.

6 Poggioli.

7 Frontex, Annual Activity Report (AAR) 2014, 13 May 2015, 14.

8 *Guardia Costiera* is part of the Italian Navy but under the control of the Ministry of Infrastructure and Transport.

9 Frontex, AAR 2014, 14–15.

During its first two months of operation, over 1,000 officers, up to 9 off-shore patrol vessels (OPVs) and 5 aircraft participated in Triton. These forces rescued over 14,000 people and arrested 57 suspected human traffickers.¹⁰ Despite these efforts, migrant crossings continued unabated. In April 2015, five migrant boats carrying nearly 2,000 immigrants sank in the Central Mediterranean outside the Frontex AOR, killing more than 1,200 people.¹¹ One sinking near Lampedusa killed over 800 people.¹² These tragedies took place just before a European Council (EC) meeting on 23 April and spurred it to immediate action. The EC extended the Triton SAR zone 138 miles south of Sicily and directed the European External Action Service (EEAS) to prepare for a CSDP operation to undertake a mission to “disrupt the business model of human trafficking”. Ships and aircraft from the new operation were to patrol much of the sea gap between the territorial waters of Libya and the southern and eastern edge of the Triton SAR zone.

As a stopgap, several member states (including Belgium, Germany, Italy, Ireland and the UK) sent naval vessels to the Central Mediterranean to augment Triton until the new EU Naval Force Mediterranean (EUNAVFOR MED) could be launched. These larger vessels could accommodate more migrants and possessed technology not generally found on cutters: thermal cameras, cell phone interception equipment, and linked data from other ships and shore facilities. As the commander of the Belgian naval ship *Godetia* explained, “I had more information than Frontex headquarters because as a Navy ship I was getting linked data from NATO.”¹³

The launch of EUNAVFOR MED did not end the efforts of Frontex in the same region. During 2015, Triton units were to rescue 38,000 people and over 23,000 in 2016. From 2015–2018, Frontex deployed 523 officers and 9 patrol vessels from 26 EU member states in the Triton AOR.¹⁴

10 Frontex, AAR 2014, 17–18; House of Lords, European Union Committee, “Operation Sophia, the EU’s naval mission in the Mediterranean: an impossible challenge.” 14th Report of Session 2015–16, 13 May 2016.

11 Garelli, 813–821.

12 Federica Mogherini, “Congratulations to the EU Military Staff on your 15th Anniversary — 2001 / 2016,” *IMPETUS: Magazine Of The EU Military Staff*, European External Action Service (EEAS), Brussels, Spring/Summer 2016 Issue #21, 2–4.

13 CDR Philippe De Cock BN, interview with John Sherwood, 17 October 2018, telephone.

14 Council of the European Union, EU Operations in the Mediterranean Sea Fact Sheet, 4 October 2016; Eugenio Cusumano, “Migrant Rescue as Organized Hypocrisy: EU Maritime Missions Offshore Libya between Humanitarians and

Operation Sophia

Journalists often portray Operation Sophia as a “knee-jerk” reaction by the EC to the April 2015 Lampedusa tragedy. While it certainly motivated the council to act, the concept of a CSDP maritime operation focused on migration issues had deep roots stretching back to the CSDP tasks established by the Lisbon Treaty and Europe’s place in the world as envisioned in the Maastricht Treaty. In 2014, the EEAS Maritime Security Strategy (MSS) and Action Plan identified cross-border “trafficking of human beings and smuggling of migrants, organized criminal networks facilitating illegal migration, [and] trafficking of arms and narcotics, smuggling of goods and contraband” as one of the four most significant maritime threats to the union.¹⁵

Fundamental to CSDP planning for migration operations in 2015 was the principle espoused by the MSS that EU maritime missions would be based upon four guiding principles: “a cross-sectoral approach, functional integrity, respect for rules and principles, and maritime multilateralism”.¹⁶ For Sophia, this would mean an operation that adhered to EU and international laws and norms; one that was integrated with other operations (both on land and sea) and included a variety of nation state participants and organisations; and one that took a multifaceted, full spectrum approach to the problem at hand.¹⁷

With that said, the CSDP was an organ of the EC and, by extension, the 28 member states of the European Union. In 2015, there was no clear-cut consensus amongst member states regarding how the union should handle the migration crisis in the Mediterranean. In *Atalanta* (the first CSDP maritime operation) the mission had been straightforward: protect ships transiting the Horn of Africa from pirates and, if possible, apprehend and prosecute pirates. Merchant ships were the mission’s centre of gravity. For the migration crisis, the centre of gravity was less clear. Was it saving lives and preventing drownings at sea? Protecting Europe’s borders and creating en-

Border Control.” *Sage Journals*, 6 June 2018, <https://journals.sagepub.com/doi/full/10.1177/0010836718780175>, accessed 20 May 2010.

15 Council of the European Union, European Union Maritime Security Strategy (EUMS), 24 June 2014.

16 High Representative of the Union for Foreign Affairs and Security Policy, European Commission, Second report on the implementation of the EU Maritime Security Strategy Action Plan, 14 June 2017, 5.

17 EUMS 2014.

hanced awareness and security in the maritime domain? Or combatting migrant smuggling and human trafficking?

Christophe Goussot, the EEAS's CSDP coordinator for Libya and the Lead Strategic Planner for Operation Sophia, was involved in many of the early debates about Sophia and its mission. He explained to me in 2019 that there were three distinct groups of member states:

1. The framework country, Italy, which was focused mainly on migration [i.e. how to control it].
2. States solely focused on search and rescue and saving lives. The leading proponent of this approach was Germany.
3. States concerned with the broader strategic context: stability in the central Mediterranean. Migrant smuggling is a symptom of a broader problem. This group was led by France and the United Kingdom.¹⁸

The naval mission that resulted from these discussions incorporated all three of these concerns. On 15 May 2015, the EC announced that it would be initiating a new CSDP mission to “conduct a military crisis management operation contributing to the disruption of the business model of human smuggling and trafficking networks in the Southern Central Mediterranean (EUNAVFOR MED) . . . in accordance with applicable international law, including UNCLOS and any UN Security Council Resolution”.¹⁹

This goal would be achieved in three phases. The first phase would consist of monitoring the migration networks in the Central Mediterranean and “patrolling on the high seas in accordance with international law”. In practice, Phase 1 would involve extensive SAR type work in accordance with UNCLOS, SOLAS and the 1979 SAR Convention.²⁰ As Goussot explained, “it is not a SAR operation. It was designed to disrupt the business model of human trafficking. But, of course, because of the nature of the crisis and EU member state obligations under SOLAS and UNCLOS, the operation initially involved quite a lot of search and rescues (SOLAS incidents)”.²¹

To disrupt human trafficking, Phase 2A stated that forces of EUNAVFOR MED would begin conducting “Boarding, search, seizure

18 Christophe Goussot, interview with author, 20 June 2019, telephone.

19 Official Journal of the European Union, COUNCIL DECISION (CFSP) 2015/778 of 18 May 2015 on a European Union military operation in the Southern Central Mediterranean (EUNAVFOR MED), 19 May 2015.

20 COUNCIL DECISION (CFSP) 2015/778 of 18 May 2015.

21 Goussot interview.

and diversion on the high seas of vessels suspected of being used for human smuggling or trafficking, under the conditions provided for by applicable international law”.²² Once an appropriate UN Security Council Resolution (UNSCR) had been passed and the Libyan government provided its consent, EUNAVFOR MED warships, in Phase 2B, would begin interdicting vessels suspected of “being used for human smuggling or trafficking” in Libyan territorial waters. Under Phase 3, as authorised by a new UNSCR as well as consent by Libya, EUNAVFOR MED would “take all necessary measures against a vessel and related assets, including through disposing of them or rendering them inoperable, which are suspected of being used for human smuggling or trafficking, in the territory of that State, under the conditions set out in that Resolution or consent”.²³ Phases 2A, 2B and 3 were meant to combat human trafficking and thereby reduce illegal immigration and improve overall maritime security in the region—thus addressing the concerns of Italy, France and the UK. The operation officially commenced at sea on 22 June 2015. Twenty-six member states ultimately contributed either ships, aircraft or personnel to the operation.²⁴

The humanitarian principle of *non-refoulement*, as enshrined in the Charter of Fundamental Rights of the European Union, prevented EU ships from returning migrants to Libya. Under this principle, “no one may be removed, expelled or extradited to a State where there is a serious risk that he or she would be subjected to the death penalty, torture or other inhuman or degrading treatment or punishment.”²⁵ The Dublin Regulation stipulates that the first EU member state that a migrant reaches (either by land, sea or air) is responsible for processing that person’s asylum claim. Effectively, these rules meant that most migrants intercepted by EU vessels were disembarked in Italy. That number totalled 154,000 in 2015—a figure slightly lower than the 170,000 who had arrived the previous year but still alarming to the Italian government and populace.²⁶ Sophia forces deliv-

22 COUNCIL DECISION (CFSP) 2015/778 of 18 May 2015.

23 *ibid.*

24 Martin Ewence, “ANALYSIS — Enduring response: EU NAVFOR and the Mediterranean migration crisis,” *Jane’s Navy International*, 18 November 2015, 1–6.

25 Official Journal of the European Communities, Charter of Fundamental Rights Of The European Union, 18 December 2000.

26 International Organization for Migration (IOM), Global Migration Trends 2015 Factsheet, 19 April 2016, <https://www.iom.int/news/iom-releases-global-migration-trends-2015-factsheet>, accessed 16 April 2020.

ered over 8,000 refugees to Italy; Triton, over 38,000; and the rest were rescued by NGOs, merchant vessels and the Italian security services.²⁷

Most migrants interdicted by Sophia units ended up in “Hotspots” in Italy at Lampedusa Island, and at Trapani and Pozallo in Sicily. As originally conceived, Hotspots were meant to be temporary reception centres, not permanent camps.²⁸ The approach called for the eventual relocation of legitimate asylum seekers to other member states. Those deemed ineligible for asylum would be returned to their home countries by Frontex. In practice, just a few states accepted migrants from Italy, and only a small number of migrants were returned to their homelands due to the *non-refoulement* principle.

In October 2015, Sophia forces began conducting Phase 2A operations—interrogating, searching and in some cases seizing vessels suspected of being used for human smuggling or trafficking in international waters under the legal authority of UNSCR 2240.²⁹ During the first ten months of 2016, Sophia units captured and turned over 53 suspected smugglers to Italian authorities and disposed of 269 smuggling boats.³⁰ These actions had no impact on unauthorised migration in the Central Mediterranean, which increased from 155,000 migrants in 2015 to over 178,000 in 2016.³¹

Clearly, even after the implementation of Phase 2A, Sophia was not reducing human trafficking enough to stem the flow of migration to Europe. Human traffickers knew that EU forces could not operate within the territorial waters of Libya and rarely if ever ventured further than 12 nautical miles from the coast. By the middle of 2016, these traffickers stopped using larger ocean-going vessels altogether and instead employed

27 EEAS, EUNAVFOR MED – Operation Sophia, Six Monthly Report: June 22nd to December 31st, 2015, 29 January 2016, 13; Council of the European Union, EU Operations in the Mediterranean Sea Fact Sheet, 4 October 2016.

28 Maria Margarita Mentzelopoulou and Katrien Luyten, European Parliamentary Research Service, European Parliament, Hotspots at EU External Borders State of Play, PE 623.563, June 2018.

29 See European Union Political and Security Committee, Political and Security Committee Decision (CFSP) 2016/118 of 20 January 2016 concerning the implementation by EUNAVFOR MED operation SOPHIA of United Nations Security Council Resolution 2240 (2015) (EUNAVFOR MED operation SOPHIA/1/2016), 29 January 2016.

30 EEAS, EUNAVFOR MED Op Sophia Six Monthly Report, 1 January–31 October 2016, 30 November 2016.

31 Frontex, AAR 2016, 21 June 2017, 81.

rubber boats. Migrants, rather than traffickers, would steer the boats.³² Because of the flimsy nature of these craft, the EU had no legal choice but to rescue migrants once they reached international waters. According to Goussot, “the way the operation was engineered was as a rapid response to a crisis. There was a realisation in 2016 that more needed to be done for the operation to be really effective.”³³

To fully succeed, Sophia needed to be able to arrest traffickers and destroy their boats in Libyan territorial waters and ashore—i.e. move to phases 2B and 3. Unfortunately for the EEAS, Sophia was never able to secure permission from the Government of National Accord in Libya to enter Libyan territorial waters or from a UNSCR to provide the necessary legal authority for such operations.³⁴ To keep France, the UK and Italy on board, the EC decided to employ the Libyan Navy Coast Guard (LNCG) as a proxy force to combat human trafficking within Libyan territorial waters. It also expanded the operation’s mission beyond human trafficking. In June 2016, the Council announced that it was broadening Sophia’s mandate to include (1) capacity building and training of the LNCG, and (2) contributing to information-sharing and to the implementation of the UN arms embargo in accordance with UNSCR 2292 (June 2016).³⁵ The additional task of monitoring the oil embargo was added in July 2017.³⁶

This LNCG partnership resulted in a dramatic decrease in migrants intercepted by EU units. At the end of 2017, the EEAS reported 118,000 unauthorised crossings in the Central Mediterranean route;³⁷ by the end of 2018, that number had fallen to 23,487.³⁸ The LNCG alone intercepted 20,000 migrants in 2017.³⁹ In 2018, it returned 15,235 migrants to Libya.⁴⁰

32 Traffickers also occasionally towed migrants to SAR areas, making outboard motors unnecessary. See CDR Sr. Grade Guy Schotte, Belgium Navy, interview with author, 25 September 2019, WhatsApp.

33 Goussot interview.

34 Op Sophia Six Monthly Report, June 22nd–December 31st, 2015, 19.

35 EEAS, Strategic Review On EUNAVFOR Med Op Sophia, EUBAM Libya & EU Liaison And Planning Cell, 26 July 2017, 30; COUNCIL DECISION (CFSP) 2016/993 of 20 June 2016 amending Decision (CFSP) 2015/778.

36 “EUNAVFOR MED Operation Sophia: mandate extended until 31 December 2018.”

37 European Union Common Security and Defence Policy: Missions and Operations.

38 Frontex, Risk Analysis for 2019, 16.

39 Bathke, “When Helping Hurts.”

40 *No Escape from Hell*, 23. Oberti, “Agreement between Italy and the Libyan coast-guard.”

This partnership, however, was not without its critics. Sea rescue NGOs reported numerous abuses committed by Libyan coastguards: violations ranged from discharging weapons indiscriminately to rape and murder. Hans Witthöft, a RHIB driver with Sea-Eye in 2018, rescued women who had been raped by a Libyan coastguard unit. “They wanted to jump overboard. They had no will to live.”⁴¹ Once returned to Libya, the migrants faced torture and deprivation in Libyan internment camps. The director of the Misrata camp admitted, “There is overcrowding, people sleep in corridors. The food, living conditions and accommodation are bad, bad, bad.”⁴²

The European Commission (EUCOM) understood these issues well before the LNCG capacity building programme commenced. In December 2016, the European Union and the International Organization for Migration (IOM)) launched a €346 million joint initiative designed to protect “migrants along migration routes, providing them with socio-medical care, and offering safer and better governed migration processes”.⁴³ EUNAVFOR MED also included more human rights training for the LNCG and worked with various law enforcement authorities to weed out bad actors. Finally, the EU Border Assistance Mission Libya (EUBAM Libya), through advising and mentoring activities, worked to improve the human rights record of the Libyan border police and customs service.⁴⁴

By July 2018, EUNAVFOR MED had trained 231 LNCG with 100 more personnel in the pipeline. A new Italian national mission, *Mare Sicuro*, trained additional members of the Libyan police coastguard. Together, these coastguards were interdicting close to 75% of all migrants departing from Libya and returning them to Libya—taking tremendous migration pressure off Italy and Malta and allowing Sophia units to focus mainly on non-SAR missions.

Since its inception in 2015, Sophia had evolved from an operation mainly engaged in saving lives at sea to a multifaceted maritime security operation. In addition to building LNCG capacity and fighting human trafficking, the operation eventually enforced both the UN arms and oil embargoes for Libya. The oil embargo mission, added in July 2017, was seen as particularly vital due to its linkages with human trafficking and other crimes.⁴⁵ Finally, Sophia cast a security and maritime domain aware-

41 Hans Witthöft interview.

42 *No Escape from Hell*, 38.

43 European Commission, EU-IOM Joint Initiative for Migrant Protection and Reintegration.

44 EU Integrated Border Assistance Mission in Libya (EUBAM Libya), March 2019.

45 EEAS, Strategic Review, 27 July 2018, 6–7.

ness umbrella over a large swath of the Central Mediterranean—which was highly beneficial to both member states concerned about terrorism and also NATO's Operation Sea Guardian. Cooperation between EUNAVFOR MED and NATO reached a new high in 2018 with both parties coordinating operational units in the Mediterranean and sharing information as well as logistical support, including refuelling.⁴⁶

Despite these successes, in the end Sophia could not avoid falling prey to member state politics. On 18 July 2018, the Minister of Foreign Affairs of Italy, Enzo Moavero Milanesi, sent the High Representative of the EU, Federica Mogherini, a letter requesting an immediate revision of migrant disembarkation procedures for Operation Sophia, “indicating that pending that revision Italy would no longer be in a position to accept exclusive disembarkation of persons rescued at sea by the assets of the operation in Italian ports”.⁴⁷ Italy's new stance on disembarkation, Goussott explained, put Sophia “between a rock and a hard place” because no other member state stepped up to offer the operation alternative disembarkation ports. Hence, the EC had no choice but to withdraw surface naval assets from the operation. On 31 March 2019, it extended the operation's mandate until 30 September 2019 but it temporarily suspended its naval assets.⁴⁸ On 30 September 2019, it withdrew all surface naval assets from Sophia, effectively ending the naval mission.⁴⁹ A force of six maritime patrol aircraft continued to surveil the Sophia AOR, and the LNCG capacity building mission continued while the EC contemplated the fate of the overall operation.⁵⁰

New Operations: Irini and Themis

On 19 January 2020, responding to pleas from the UN and Germany, the EC agreed to launch a new operation in the Mediterranean aimed at enforcing the UN arms and oil embargoes through surveillance and, when

46 *ibid.*, 22.

47 EEAS, Strategic Review, 26 July 2018, 30.

48 European Parliament, Legislative Train Schedule: Towards a New Policy on Migration, European Naval Force, Mediterranean Operation Sophia, <https://www.europarl.europa.eu/legislative-train/theme-towards-a-new-policy-on-migration/file-eunavfor-med-operation-sophia>, accessed 18 May 2020.

49 European Union External Action, EU CSDP Missions & Operations for Human Security, May 2019.

50 *ibid.*

necessary, by conducting inspections in international waters. The “new” mission, called Irini, would also train and build the capacity of the Libyan sea services and contribute to disrupting human trafficking mainly through aerial surveillance. Irini commenced operations on 17 February 2020—the same date Sophia permanently ceased all activities. Sophia was launched in 2015 as part of an EU response to a surge of illegal immigration in the Central Mediterranean. As much as Sophia evolved over the course of four years, she could not shake off her association with this issue—especially saving lives at sea. The new Irini mission focused on embargo enforcement and put maritime security, conflict resolution and enforcement of international law front and centre.

Triton, which had also seen its interception numbers shrink from 38,000 people in 2015 to just 8,000 in 2017, was also rebranded. The mission that replaced it in 2018, called Themis, left “the decision on disembarkation to the country coordinating the rescue”. Themis would place more emphasis on border control and surveillance than humanitarian rescue. Frontex also shrank Themis’s AOR to just 24 miles from the coast of Italy versus 30–138 miles for Triton—a factor that also reduced the number of SARs.⁵¹ Frontex, much more so than EUNAVFOR MED, has succeeded in navigating migration politics by being acutely sensitive to the concerns of front-line nations like Italy and making appropriate (and legal) course corrections as requested. Consequently, it is seen more as an ally in the migration effort than an independent actor. In November 2019, the EC approved the expansion of the European Border and Coast Guard Agency standing force from 1,300 to 10,000.⁵²

Conclusions

One of the strengths of the EC is its willingness to take a long view of history and recognise that deep structural problems take years and often decades to solve. EU warships still sail in the waters of the Horn of Africa over 12 years after the launch of Atalanta; and EU troops still maintain

51 Steve Schere, “In new EU sea mission, ships not obliged to bring migrants to Italy,” *Reuters*, 1 February 2018, <https://www.reuters.com/article/us-europe-migrants-italy/in-new-eu-sea-mission-ships-not-obliged-to-bring-migrants-to-italy-idUSKBN1FL62M>, accessed 20 May 2020.

52 “EU Expands its Border Force With 10,000-Member Standing Corps,” *The Maritime Executive*, 15 June 2020, <https://www.maritime-executive.com/article/eu-expands-its-border-force-with-10-000-member-standing-corps>, accessed 20 June 2020.

peace in the Balkans 16 years after assuming these duties from the NATO SFOR. The Irini and Themis operations must endure in the same spirit, and the EC must stay the course. Incrementally, the council must also work even harder to improve the plight of the migrant, in Libya or wherever he or she may end up. Europe spends more on foreign aid than any country on planet earth. A total of 40% of official global humanitarian assistance and over half of official global development assistance comes from EUCOM and EU member states.⁵³ Its soft power is preeminent among nations, as is its commitment to fundamental human rights. CSDP missions must forge better links with the humanitarian organisations delivering food and other services to refugees and migrants in Libya as well as strengthen its EUBAM mission on the ground in Libya, the Sahel and other African nations.

At sea, better coordination with sea rescue NGOs might further lighten the Frontex and EUNAVFOR roles in migrant rescue and improve the human rights record of the Libyan coastguards. In this regard, continued NGO participation in EUNAVFOR hosted Shared Awareness and De-confliction in the Mediterranean (SHADE MED) conferences is a step in the right direction. Strategic messaging operations should be better coordinated with Frontex, and other partners. In the end, EUNAVFOR's central message should focus on the three concerns originally outlined by Gousset: humanitarianism (saving lives), protecting Europe's borders (ensuring orderly migration), and maritime domain awareness and security (i.e. counter organised crime/terrorism). Information operations also should stress that without Irini and Themis, there will be increased migration, organised crime and deaths at sea.

Finally, the most controversial element of the programme (the LNCG capacity building mission) must not only continue but be expanded to include the Libyan Police Coast Guard because of the dramatic success these agencies have demonstrated in curbing migration and rescuing migrants at sea. Building nascent security organisations takes years of effort and might require more support from European naval and coastguard academies in training Libyan officers. EU funds may be required to augment the meagre salaries of these officers and improve their infrastructure (boats, port facilities, etc.). These coastguards represent the linchpin for the success of the mission going forward, and no effort should be spared to improve not only their effectiveness, but their human rights record as well.

53 Derek E. Mix, *The European Union: Foreign and Security Policy*, Congressional Research Service Report 7-5700, 8 April 2013, 19.

In broader terms, EU migration operations feed into allied low-end maritime strategy in a variety of very significant ways. The recently published “European Union Maritime Security Strategy” stakeholder’s guide authored by the EC reveals just how closely these operations fit into the goals and principles of the greater strategy. Sophia/Irini/Triton/Themis improve border control and security; counter a variety of security threats; and for the most part adhere to core EU principles (such as multilateralism and respect for the rule of law).⁵⁴ Through these operations, EU navies are further enhancing the union’s ability to operate outside the NATO sphere, thereby increasing EU naval capability and interoperability. The experience EU navies gain by working with coastguards, and other law enforcement bodies, not only promotes information-sharing across sectors but forges strategic partnerships that could be critical in a hybrid warfare situation in the Baltic or elsewhere. Lastly, these operations promote the common defence principles espoused in the Lisbon Treaty, build solidarity between member states, and serve to further the process of integration and unification of EU security structures. The migrant crisis has already spurred the creation of an EU European Border and Coast Guard Agency standing force of 10,000 personnel. Conceivably, the positive effects of Sophia/Irini/Triton/Themis could lead to additional standing EU forces. Dr Sebastian Bruns has already floated the idea of a Standing EU Naval Auxiliary (ships utilised heavily in Sophia).⁵⁵ Despite their low-end nature, naval migration operations show no signs of abating. EU navies must leverage these operations to the greatest extent possible in order to improve themselves, justify their existence and project naval power into the Mediterranean and beyond.

54 For more, see the EC, “EU Maritime Security Strategy: Responding Together: A Guide for Stakeholders,” https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/leaflet-european-union-maritime-security-strategy_en.pdf, accessed 26 September 2020.

55 Moritz Brake and Sebastian Bruns, “Towards a Standing European Union Auxiliary Navy,” *Europa*, Friedrich Ebert Stiftung, <https://fes-europe.eu>, accessed 27 September 2020.

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Focussing Theatres

Bridge the Gaps—An Allied Naval Approach for Northern Europe

Julian Pawlak¹

Introduction

Following 1990, Northern European waters appeared to be a neglected part of allied maritime strategic thought until NATO's recent paradigm change.² Despite security concerns from some of its littoral states which never fully vanished, the maritime operational areas, more precisely the Baltic, the Norwegian and North Seas, as well as their linkage to the North Atlantic, did not receive the strategic attention they deserved.³ They continued to oscillate between "Bastion, Backwater or Battlefront".⁴ As the Western alliance finally acknowledged the renewed strategic rivalry it has to face today, it initiated a fundamental turning point. Repercussions, such as increased military and subversive activities, are apparent and pronounced most in the region this chapter deals with, impacted by the back-drop of renewed competition between the great powers.⁵ The setback to-

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- 1 The author wants to thank Sebastian Bruns for his inspirational remarks on this chapter.
 - 2 Rainer Meyer zum Felde, "Abschreckung und Dialogbereitschaft – der Paradigmenwechsel der NATO seit 2014", *SIRIUS – Zeitschrift für Strategische Analysen*, vol. 2 (2), 2018, 101–117.
 - 3 Rebecca Pincus, "Towards a New Arctic. Changing Strategic Geography in the GIUK Gap", *the RUSI Journal*, vol. 165 (2020), Issue 3, 53–54.
 - 4 Jeremy Stöhs, "Bastion, Backwater, or Battlefront? Changing Strategic Views Along Europe's Northern Shores", in *Conceptualizing Maritime & Naval Strategy. Festschrift for Captain Peter M. Swartz, United States Navy (ret.)*, eds. Sebastian Bruns and Randy Papadopoulos (Baden-Baden: Nomos, 2020), 321–344.
 - 5 The present *great power competition* was acknowledged largely following its mentioning in the 2015 National Military Strategy and the 2017 National Security Strategy of the United States, where it was described as the global competition between the US, Russia and China. Whilst this chapter deals predominantly with Russia as NATO's main competitor in the particular region, China and the CCP's global intentions play an ever-growing role there as well. The PLAN's first visits to the Nordic-Baltic region, Chinese claims in the Arctic, and its naval build-up indicate its activities will increase in those theatres too. Hence, allies will need to prepare to deal with the naval activities of more than one contender.

wards this antagonism and the ultimate fear of an escalating military conflict in the region brought the respective theatres back onto the security policy agenda of European and NATO capitals.

This chapter features the theatres illustrated in an allied (here: NATO) context. These areas figure as components of a combined strategic realm, the so-called Northern Flank.⁶ Such a depiction promotes the aim of this article, that is, to make the case for a combined strategic approach in Northern Europe.⁷ To wit, it does not intend to lessen regionalisation efforts, but to highlight the extensive strategic outline. The beginning refers to the strategic fundamentals: it defines the Northern Flank, clarifies its relevance as a whole, and stresses a strategic Euro–Atlantic approach. The article provides an overview of the setting and briefly accentuates allied initiatives and cross-theatre challenges.⁸ It concentrates on the high end of naval challenges, links the operational areas in the region and finally provides recommendations to *bridge the gaps* for an allied naval approach.

Definition and setting

The region of interest encompasses various maritime areas of operation. On the one hand, it includes the North Sea and the North Atlantic. On the other, it encircles the shallow and confined Baltic Sea region, as well as the abyssal Norwegian Sea up to the High North. Each theatre provides the

6 During the Cold War, the term “flank” served originally as the region’s ascription to its role as a tactical northern flank “subordinate to and part of the more central [European] battlefield”. Gjert Lage Dyndal, “The Northern Flank and the High North Scenarios of the Cold War”, Paper held at conference: ‘Peripherie oder Konfliktzone? Die NATO-Flanken 1961 bis 2013’, Zentrum für Militärgeschichte und Sozialwissenschaften der Bundeswehr, Potsdam, Germany, 2013, 13. Originally concerning the Baltic Sea and Southern parts of Scandinavia, its focus shifted further north. Eventually, the areas up to the High North served as “peripheral theatres of war”. *ibid.* In this analysis, the *strategic* Northern Flank helps to sum up the selected areas of operation in Northern Europe for an allied approach.

7 See also Rowan Allport, *Fire and Ice – A New Maritime Strategy for NATO’s Northern Flank* (Human Security Centre 2018).

8 Due to the limited scope this chapter offers, its overview of military challenges and capabilities remains a concise breakdown instead of an intensive tour d’horizon. Whilst its focus continues to be on the high end of military escalation, it does not go deeply into numbers and capacities. Several authors have examined the operational areas illustrated here recently. See Magnus Nordenman (2019) on the North Atlantic or Heinrich Lange et al. (2019) and Martin Murphy et al. (2016) on the Baltic Sea.

strategic planner with its own prominent *gap*, supposedly recalled as its own Achilles heel. The GIUK gap, the Bear gap and the Suwãki gap are addressed here. While the latter represents the land connection between Poland and Lithuania, both others are maritime corridors.⁹ In detail, the GIUK gap encompasses the area between Greenland, Iceland and the United Kingdom.¹⁰ Its reputation still lives off its high profile which originated from the Cold War,¹¹ although a similar calculated threat of large-scale penetrations by Russian naval assets seems most unlikely for the time being.¹² Nevertheless, the gap embodies “a strategic corridor for naval operations between the Arctic and the North Atlantic”,¹³ and therefore the geo-

9 Whether the three cases mentioned in fact represent gaps or should be labelled as operational corridors for passage and/or wider strategic chokepoints may be debatable and varies in the research literature. As the following shows, their strategic significance surpasses a limitation on their operational theatres in any case.

10 Including Norway, it is the designated GIUK-N gap.

11 The Gap's legacy relates primarily to its role as a gateway for the alleged Soviet intention to fight a “Battle for the Atlantic III” by challenging NATO SLOCs, although its relevance has been pointed out beforehand, including the vital role of the United States' outposts on Iceland or Greenland. See Pincus, “A New Arctic”, 50 ff. The former still remains a key reference, even though such assumptions proved wrong. See Dismukes, Bradford, “The Return of Great-Power Competition-Cold War Lessons about Strategic Antisubmarine Warfare and Defense of Sea Lines of Communication”, *Naval War College Review*, vol. 73 (2020) No. 3, art. 6, 3–6.

12 Yet, North American reinforcements via the North Atlantic would allowedly alter the vast ocean into a target-rich environment. Given the case of an article five conflict in Europe, decreasing such reinforcements would be in Russia's interest to avoid the alliance's full military potential on the continent—if it were not for the current lack of capacities to do so in an ample way. Certainly, one can expect individual Russian submarines like the Yasen-class to be diving in the depths of the Atlantic by now. However, in consideration of the Russian Navy's (particularly the Northern Fleet's) main tasks, the fleet would be presumably working at full capacity by that already. The major one, the Bastion defence concept, contains the end of sea control in the inner Bastion segment (the Barents Sea and the High North), along with the attempt to deny the Norwegian Sea, the outer bastion, to NATO and allied forces, all with its current numbers and condition. With the emergence of UUVs, USVs and further unmanned systems, the approach might evolve in future. See also: Steve Wills, “These aren't the SLOC's you're looking for: mirror-imaging battles of the Atlantic won't solve current Atlantic security needs”, *Defense & Security Analysis*, 36,1 (2020), 9–10.

13 United States Department of Defense, “Report to Congress. Department of Defense Arctic Strategy”, Office of the Under Secretary of Defense for Policy, June 2019. <https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/2019-DOD-ARC-TIC-STRATEGY.PDF>.

graphically entailed access to NATO's traditional home waters for most of Europe *and* the Russian West, likewise.¹⁴ The Suwałki gap, the short land border of the two NATO members, is around 65 km wide.¹⁵ Its presence in the allied security policy discourse evolved mainly due to the 2014 war in Ukraine. The Suwałki area remains the only direct land corridor connecting the three Baltic NATO members with Poland and their further allies, and therefore underscores its strategic significance for allied reinforcements.¹⁶ Cutting it off would risk Baltic integrity. As a third area, the Bear gap represents the maritime region between the Northern Norwegian mainland and the Svalbard archipelago,¹⁷ including Bear Island midway. It is a landmark for the beginning of the Russian Navy's inner bastion segment.¹⁸ It symbolises the passage its vessels need to take in heading towards the Norwegian Sea and further South. Additionally, the other way around, it is one of the "entrances" to the Arctic.¹⁹

14 Benjamin Rhode, "The GIUK gap's strategic significance", *IISS Strategic Comments*, vol. 25 comment 29, October 2019.

15 Linear distance. Its name comes after the Polish town Suwałki.

16 Its purpose and the shortcomings regarding the defence of the three Baltic States are revealed most famously by a prevalent RAND study. See David A. Shlapak and Michael Johnson, *Reinforcing Deterrence on NATO's Eastern Flank. Wargaming the Defense of the Baltics* (Santa Monica, CA: RAND Corporation, 2016). https://www.rand.org/pubs/research_reports/RR1253.html.

17 The archipelago was placed under Norwegian sovereignty with the signing of the Spitsbergen Treaty in 1920. Since its entrance into force in 1925, the island group has been under Norwegian administration. While the signatory nations are able to follow economic activities there, the territory itself is demilitarised and does not allow the permanent stationing of military forces.

18 As explained in footnote 11.

19 On Russian military forces and missions in the High North, see Katarzyna Zysk: "Russia's Military Build-Up in the Arctic: to What End?", CNA occasional paper, September 2020.

Northern Europe with the three gaps and the Russian Bastion segments.²⁰



Each section is seen as a linchpin in its respective operational area and accommodates unique characteristics and challenges. Nevertheless, particularly in a high-end conflict scenario, any military escalation would hardly stay limited to a particular area. Quite the contrary, the risk of a broad spread of military operations into the wide range of the defined Northern Flank would be high.²¹ Even if one considers different types of military risks in the region, namely on the high and low levels of armed conflict,

20 Map by Norman Einstein, published under the GNU Free Documentation License (GFDL). Own adjustments included. https://commons.wikimedia.org/wiki/File:Norwegian_Sea_map.png. Please note that any added mark represents only a broad indication of the strategic objects.

21 Conflict and escalation scenarios vary from deliberate to unintended escalation, like launching a weapon by accident. Of course, incidents might occur simultane-

the complexity of strategic circumstances may even result in the smallest incidents setting the ball rolling. In other words, even primary limited (non-)military action in or against a NATO member state could cause military support from the whole alliance and even trigger Art. V.²² Therefore, while the Baltic Sea region might offer the potential to spark presumably confined conflicts due to low-level incidents and grey-zone challenges, allied representatives identify the Norwegian Sea and High North as an area of impact by horizontal escalation originating in adjacent theatres.²³ In any case, allied naval forces have to be prepared to collaborate on challenging activities in Northern European waters, while mindful of the risk of spillover effects around the continent. While European military forces in particular might be able to deal with limited single sources of fire, the effort of collective defence is in need of a structured strategic framework.²⁴ Thus, going into detail at that point argues reasonably for an allied naval approach for the Northern Flank.

Recent initiatives and cross-theatre challenges

Current initiatives mark the significance of collective defence in the alliance's current naval posture. They include the (re-) establishment of the

ously in different areas and on different stages. See Ulrich Kühn, *Preventing Escalation in the Baltic. A NATO Playbook* (Carnegie Endowment for International Peace, 2018). https://carnegieendowment.org/files/Kuhn_Baltics_INT_final_WEB.pdf.

- 22 Even though this chapter is limited on an approach related to high-intensity conflicts, it is relevant to acknowledge that the *casus foederis* is not limited to expected Cold War era-like attacks that rely on military means. Since alliances such as NATO "have succeeded in deterring interstate military disputes, adversaries are seeking means of changing the status quo through security incidents short of an armed attack". See Michael M. Bosack, "Ameliorating the Alliance Dilemma in an Age of Grey-Zone Conflict—Lessons Learned from the U.S.–Japan Alliance", *Naval War College Review*, vol. 73 (2020), No. 4, art. 5, 2.
- 23 Covering the Baltic Sea region, the "reversed Las Vegas rule" applies: what happens in the Baltic does not stay in the Baltic. See Julian Pawlak and Sebastian Bruns, "Die Ostsee ist nicht Las Vegas. Das Mare Balticum im sicherheitspolitischen Kontext", *Marine Forum* 6-2019, 20–35. James Black et al., *Enhancing deterrence and defence on NATO's northern flank. Allied perspectives on strategic options for Norway* (Santa Monica, CA: RAND Corporation, 2020). https://www.rand.org/pubs/research_reports/RR4381.html.
- 24 Svein Elfjestad, "Norway and the North Atlantic: Defence of the Northern Flank", *Whitehall Papers*, 87, 1 (2017), 62.

NATO Atlantic Command/Joint Forces Command Norfolk and the US Navy's 2nd Fleet, or the German Navy's procedure towards (regional) leading responsibility with its DEU MARFOR and the Baltic Maritime Component Command (BMCC).²⁵ Their orientation, particularly its increasing focus on essential components like ASW and surface warfighting, prioritises the relevance of defence capabilities, accurately themed in the Second Fleet's principle "ready to fight".²⁶ The extension of interregionally effective air assets throughout the littoral states is another relevant step in substantiating the alliance's posture.²⁷ The planned assignment of a Baltic Maritime Coordination Function to bundle NATO's maritime competence in the Baltic will be of further benefit to channelling those capacities into a cross-regional strategy. The necessity of cross-theatre considerations particularly becomes apparent in light of conflict scenarios demanding those means and preparation for the higher end of the escalation ladder.

Considering the aspect of defence and its naval dependence (irrespective of any foregone escalation trigger), the structure of regional and interregional efforts relies primarily on a broad strategic picture. Beyond more traditional threats, the cyber sphere or (covert) operations against high value targets and critical infrastructure must also be factored in.²⁸ The operational, trans-regional and therefore strategic link within the Northern waters does also not limit itself to the consequential development of long-range capabilities and prospering "mature precision-strike regimes".²⁹ Any large-scale military support originating in North America is urgently con-

25 The "German Maritime Forces", or DEU MARFOR, serve as a naval headquarters for planning and operations, similar to already existing headquarters like, for instance, UK MARFOR or STRIKFORNATO. It represents the core of the Baltic Maritime Component Command, a command centre the German Navy intends to use and provide for allied operations.

26 They compound with already existing elements, such as NATO's Standing Maritime Groups (SNMG and SNMCMG), NATO's Response Force (NRF) and Very High Readiness Joint Task Force (VJTF), or its Force Integration Units (NFIUs).

27 The (naval) airbases in Keflavik, Lossiemouth, Evenes and Nordholz shelter or operate (or intend to perspectively) long-range maritime patrol aircraft (MPA), particularly P-8 Poseidon and P-3C Orion respectively.

28 Like the ports in Antwerp, Rotterdam and Bremerhaven as well as in Tallinn, Riga and Klaipeda.

29 Andrew F. Krepinevich, *Maritime Competition in a Mature Precision-Strike Regime* (CSBA 2014). <https://csbaonline.org/research/publications/maritime-competition-in-a-mature-precision-strike-regime/publication/1>; Elfjested, "Norway and the North Atlantic", 66.

tingent on secure sea lines of communication (SLOC)³⁰ along functioning ports and infrastructure in Europe.³¹ The nature of naval forces mandates, too, that allied naval forces have to prepare for lower-level incidents, most likely in the grey zone. In parallel, they must be ready to adapt their presence towards the higher spectrum of challenges. Beyond that, a potential blockade³² of the Baltic Sea at its shallow and narrow access through Danish and Swedish waters is highly dependent on sea control in the North Sea.³³ Capable naval, air and land assets are necessary to “watch their back”, and to be proficient enough to defend power projection and physical intimidation efforts trying to deny allied operations in the region.

Vice versa, if considerable vertical *and* horizontal escalation arose *anywhere*, inducing a large-scale military conflict, it could eventually lead to the Russian bastion’s “activation” in the High North.³⁴ In line with the superordinate aim of guarding the Russian Navy’s strategic nuclear submarines (SSBNs), the ultimate pillar of Russia’s nuclear triad, such defence aspirations encompass, on the one hand, achieving sea control for the operating area of the inner bastion, namely in the Barents Sea. In addition, denying NATO allies most if not all naval activities in the Norwegian Sea would be of upmost interest to the Russian Navy. Due to the limited number of platforms available, the probability of wide-ranging Russian sea control from Svalbard to the GIUK gap will be limited in the near future. Yet, the capabilities of individual or clustered submarines should not be underrated and remain a central challenge and risk for allied navies. In addition, scenarios include the transfer of air assets to support single Russian combat vessels in the region, hence to expand alarming (long-range) strike regimes, and to eventually boost the thus potentially highly expensive exposure of Western naval assets in light of such operations.³⁵ Moreover, Russian proactive measures would not be limited to Northern waters. As pointed out by an expert assessment published by the Norwegian Ministry of Defence, the territorial integrity of NATO member and partner nations

30 This shall include the necessity of secure data flow via the multitude of undersea communication cables on the seabed of the waters.

31 Andrew Metrick, “(Un)Mind the Gap”, *USNI Proceedings*, vol. 145, No. 10, October 2019. <https://www.usni.org/magazines/proceedings/2019/october/unmind-gap>.

32 For example, due to an embargo to apply non-kinetic (political) pressure.

33 See Niklas Granholm’s chapter in this volume for a detailed discussion.

34 Harri Mikkola, “The Geostrategic Arctic. Hard Security in the High North”, FIIA Briefing Paper 259, April 2019, 5.

35 Zysk, “Russia’s Military build-up”, 11.

would be at high risk during such an escalation.³⁶ The Scandinavian capitals are aware that their Northern territories would likely be part of alleged Russian multi-domain operations in support of its bastion defence aspirations.³⁷

Europe's Northern and Baltic areas meet Russian denial capabilities based on the Kola Peninsula, in Kaliningrad Oblast and in the Western Military District. Those assets are able to hinder the unrestrained operation of naval and air assets in particular.³⁸ In line with Sam Tangredi's definition, they intend

“to prevent the attacker from bringing its operationally superior force into the contested region, or, to prevent the attacker from freely operating within the region [while] maximizing its combat power”.³⁹

Distinguishing this as an acknowledgement of the alliance's *full* military potential and considering the denial zones' de-mystification⁴⁰ serves to put this picture into perspective. To be clear, the operational risks such installations pose are beyond doubt. Yet, the scrutiny of a broad strategic setting might assist in designing considerations for the alliance to cope with such constraints. Instead of strategists and operators overthinking how to create specific technical solutions, it is crucial that countermeasures are not limi-

36 Such assessment takes place despite the collaboration in other maritime terms, such as fishery or search and rescue efforts. See Expert Commission on Norwegian Security and Defence Policy, “Unified Effort”, Oslo: Norwegian Ministry of Defence 2015, 20–21.

37 The bastion concept, parallel to the Russian maritime posture in the region and along its claimed defensive nature, relies notably on offensive means and the willingness to apply them in such a way: to deny any opponent access to particular seas and to defend Russia's own strategic vulnerabilities. See Mikkola, “The Geostrategic Arctic”, 5; Allport, “Fire and Ice”, 34; Svein Elfjested “III. The Nordic Region”, *Whitehall Papers*, 93, 1, 46.

38 Robert Dalsjö et al., *Bursting the Bubble? Russian A2/AD in the Baltic Sea Region: Capabilities, Countermeasures, and Implications* (FOI: Stockholm, March 2019). <https://www.foi.se/rest-api/report/FOI-R-4651-SE>.

39 Sam Tangredi, *Anti-Access Warfare. Countering A2/AD Strategies* (Annapolis: Naval Institute Press, 2013), 2. This is congruent to the observation of today's Russian Navy's tasks, such as serving as the naval defence force to second its Eurasian land power. See Konstantin Bogdanov and Ilya Kramnik, “The Russian Navy in the 21st Century. The Legacy and the New Path”, CNA occasional paper, October 2018.

40 Michael Jonsson and Robert Dalsjö, *Beyond Bursting Bubbles – Understanding the Full Spectrum of the Russian A2/AD Threat and Identifying Strategies for Counteraction* (FOI: Stockholm, June 2020). <https://www.foi.se/rest-api/report/FOI-R-4991-SE>.

ted to the particularly threatened domain in order for the alliance to overcome the denial capabilities it is confronted with.

The examinations presented look at the high end of an escalatory hazard. Nevertheless, they are required to prevent deliberate disputes on Europe's Northern Flank. Prevention and deterrence necessitate preparing for diverging scenarios and articulating them in a strategic manner. Signalling readiness and willingness inwards, towards its members, and outwards, aimed at its adversaries, is necessary to underline coherence and illustrate the unviable outcome of any skirmish with the alliance; not only on a military level, but particularly for any challenger's political leadership to desist from belligerent intentions.⁴¹ Such considerations of the given situation allow the Northern Flank to be seen as *NATO en miniature*; an area where almost all of the alliance's needs, issues and dynamics are present. The profound aim remains to sustain an adequate deterrence status for the entire region. It contains a decisive military defence posture⁴² and the appropriate transnational political consent to be *quick at repartee* and not to be deterred *oneself* to eventually eliminate the idea of a passive alliance that could abandon its members.⁴³

41 James H. Bergeron, "Deterrence and Its Maritime Dimension" in *Conceptualizing Maritime & Naval Strategy. Festschrift for Captain Peter M. Swartz, United States Navy (ret.)*, eds. Sebastian Bruns and Randy Papadopoulos (Baden-Baden: Nomos, 2020), 35–36.

42 Assets and platforms, awareness, readiness and mature operability.

43 *ibid.*; Likewise, at this stage, it is not sufficient to simply declare red lines for belligerent behaviour. At the high end of military escalation, any player draws such lines, for instance in regard to the deliberate use of conventional military means against its own armed forces, civilians, territory and nuclear deterrence, above all. At the lower end, as Jim Bergeron points out, the difficulty of such efforts is to "deter action both sides solidly believe will not lead to direct conflict." *ibid.*, 42. While deterrence is, by nature, built on the aforementioned red lines, those delimitations, combined with varying deterrence approaches in a single region, include the difficulty of "gap[s] emerging". See Patrick M. Morgan, "Deterrence Now", Cambridge Studies in International Relations 89, Cambridge, UK: Cambridge University Press, 2003, 83. More precisely, with differing defence concepts, the possibility of an aggressor exploiting situations where defence commitments might not be clear is a worrying issue. It is a seam line an opponent would be poised to attack. By using intermediaries, creating *faits accomplis*, avoiding officially proclaimed red lines or similar measures, adversarial governments such as Russia have succeeded in their goals in the past and still might follow similar procedures in future to achieve their own targets. See *ibid.*, 83 ff.; Van Jackson, "Tactics of Strategic Competition", *Naval War College Review*, vol. 70 (2017), No. 3. Art. 4.

Recommendations for a sustainable allied approach

The following recommendations relate to several spheres. As Geoffrey Till points out, awareness in relation to surveillance and intelligence is key for any continuative naval measures.⁴⁴ Quoting Alfred Thayer Mahan, who identified intelligence as “one of the very first desiderata of war”, Till exerts this observation for times of peace, as well.⁴⁵ As regards literally in-depth vigilance, an upgrade in maritime domain awareness “from sea floor to space”⁴⁶ in the Baltic, the Norwegian Sea and beyond, embedded within a thorough C4ISR⁴⁷ structure, is inevitable.⁴⁸

Conducting exercises as preliminaries in regard to potential parallel incidents in the Nordic–Baltic and Euro–Atlantic region is needed. They would underscore the central message of this essay, namely to combine efforts in the Baltic Sea *and* the intersection of the North Atlantic, North Sea and Norwegian Sea.⁴⁹ While the origin of necessity may vary, large-scale cross-theatre drills are advocated, *de rigueur* involving regional partner nations such as Sweden and Finland. An allied approach should also promote the idea of EU Seapower⁵⁰ and be open to further integration efforts.⁵¹ In terms of capabilities, planners have to think about how to make use of currently underexposed skills such as “NATO’s Amphibious Poten-

44 Geoffrey Till, *Seapower. A Guide for the Twenty-First Century*, 3rd edition (Routledge: New York 2013), 356.

45 *ibid.*

46 Department of the Navy, “A Blue Arctic. A Strategic Blueprint for the Arctic”, 2021, 14.

47 Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance.

48 Supplementary to the MPA capabilities, efforts can be facilitated with combined undersea networks. Subsequently to the former Sea Surveillance Systems (SO-SUS) in the North Atlantic, the deployment of numerous mobile sensors (in conjunction with UUVs, USVs and UAVs) could be beneficial in further areas of interest too, such as notably the Baltic and the Norwegian Seas. See also Metrick, “(Un)Mind the Gap”.

49 On the relevance of exercises, see Beatrice Heuser, Termod Heier and Guillaume Lasconjarias, “Military Exercises: Political Messaging and Strategic Impact”, NATO Defense College, Forum Paper 26, 2018. <https://www.ndc.nato.int/download/downloads.php?icode=546>. In this context, see particularly Ryan French’s and Peter Dombrowski’s chapter on “Exercise BALTOPS”.

50 Moritz Brake and Sebastian Bruns, “Building European Seapower: Reinigorating EU naval strategy and maritime capabilities for the 2020s”, Reprinted from *Tidskrift i Sjöväsendet*, No.5 (2020), 541–550.

51 A robust European NATO pillar is of most relevance for the alliance to cope with the strategic challenges Russia *and* China present in the 21st century. It is most

tial”⁵² to strengthen a competent allied deterrence approach. At this point, the combination of blue and green water assets becomes apparent. To identify a sustainable strategic approach and appropriate naval operations on the Northern Flank with the different domains they merge, strategists have to acknowledge that considerations in practice are not limited to “operat[ing] from the sea”, but to acting “in the maritime domain.”⁵³ This does not contradict the alliance’s most recent regionalisation efforts. Yet, this domain reflects its expansive nature in terms of the necessity of synergising multiple naval and military aspects for a complete regional approach. Besides its effect onshore, admitting mutual dependency is relevant. Even though designating Northern Europe and the Baltic Sea region in particular as a “wet flank”⁵⁴ might be of avail in promoting the maritime sector and its needs in national politics, it undermines the Northern Flank’s scope and should be reconsidered. The importance of correct terms and diction becomes clear since allies have repeatedly left misleading narratives for their opponents or got on the wrong track with descriptions and definitions.⁵⁵ This accompanies the wide scale of daily propaganda and disinformation efforts against liberal systems, which are particularly drastic in the Baltic region.

An allied naval approach ought to consider arranging its defensive orientation on enhancing protection measures from a solely “reactive character”⁵⁶ towards resolute capabilities, making any aggressor recognise he

likely that their implications, including naval activities, will be apparent on the spot.

52 John D. Williams et al., *Unlocking NATO’s Amphibious Potential. Lessons from the Past, Insights for the Future* (Santa Monica, CA: RAND Corporation, 2020).

53 Vice Admiral Andrew Lewis, Second Fleet Commander, in Lee Willet, “Owning The Battlespace: U.S. Second Fleet Builds North Atlantic Presence”, *Jane’s Navy International*, 10 November 2020.

54 Official German Navy statements include this description frequently. Recent examples are Presse- und Informationszentrum Marine, “Deutsche Marine startet nationale Verbandsübung in der Ostsee”, 31.08.2020, bundeswehr.de. <https://www.bundeswehr.de/bw-de/organisation/marine/aktuelles/german-exercise-2020-1802640>; “Nasse Flanke Ostsee: Marine startet Übung Northern Coasts”, 03.09.2019, bundeswehr.de. <https://www.bundeswehr.de/bw-de/organisation/marine/aktuelle/s/marine-startet-uebung-northern-coasts-103264>.

55 From the rediscovering of “A2/AD” in regard to Russian capabilities, the assumed “Gerasimov doctrine” and an upcoming “hyper hype”, to disorientation due to another “Battle for the Atlantic”, samples are manifold. The latter has been analysed recently by Steve Wills. See Wills, “SLOCs”.

56 Elfjested, “Norway and the North Atlantic”, 67.

would fall behind after initiating any form of malicious escalation.⁵⁷ While not decreasing the preceding deterrence-by-denial posture, adding additional weight to deterrence-by-punishment is advisable. However, invigorating the existing allied deterrence posture in such a way depends heavily on strategic signalling that essentially incorporates the above-mentioned readiness *and* willingness of the alliance's political and military leadership.⁵⁸

Strategic maritime considerations are not confined to (high-end) naval warfighting advisements, although such considerations might be correctly assumed to be a priority for a military alliance. Yet, as NATO's Alliance Maritime Strategy emphasises, supplementary to deterrence and defence, maritime forces have to comply with a wide spectrum of contributions to fulfil the aim of eventually maintaining pan-regional security.⁵⁹ Complementary to this subject, enabling wide-ranging maritime domain awareness, as already pointed out, or intensifying SAR capabilities and cooperation has the potential of strengthening regional structures. Sustaining SLOCs and access to the Arctic with its potential of new passage due to receding polar ice is of additional relevance, whilst environmental protection and human security offer plenty of opportunities for engagement out-

57 This should include concerted elements to challenge the aforementioned denial capabilities in the region.

58 In this context, a US Navy concept from the 1980s becomes relevant. As Bradford Dismukes points out, in addition to anti-submarine warfare (ASW) in the North Atlantic and the Norwegian Sea, *strategic* ASW is contextualised in the US's (but not necessarily NATO) deterrence and sea denial posture on the Northern Flank. See Dismukes, "Great-Power-Competition", 14–15; Nordenman, "North Atlantic", 200–201. Neither confirmed nor denied officially, the approach of targeting Russian SSBNs and therefore the essential pillar of their nuclear triad appears to be a double step on both the vertical *and* horizontal escalation ladder. While, two steps before, pursuing long-range capabilities and the ability to target Russian key locations, for example on the Kola peninsula, is a legitimate conventional deterrent, the targeting of SSBNs and hazarding the consequences of high escalatory risks is a tense tightrope walk. The goal of "threatening—or even seeming to threaten—those interests of great value to Russian leaders [...] could just as easily provoke escalation as induce restraint" and would therefore, with its risks and consequences for the entire alliance, supersede any present benefit. See Michael Fitzsimmons, "Horizontal Escalation: An Asymmetric Approach to Russian Aggression?", *Strategic Studies Quarterly*, vol. 13 No. 1 (Spring 2019), 120, 123. Dismukes, "Great-Power-Competition", 14–15.

59 Notably, also Cooperative and Maritime Security measures. See NATO, "Alliance Maritime Strategy", 2011, I. 2. https://www.nato.int/cps/en/natohq/official_texts_75615.htm.

side allied membership as well. However, they remain beyond the scope of this chapter.

Nevertheless, comprehension of the bigger picture is an important goal too. Bringing together practitioners, scholars and decision makers from complementary disciplines to discuss this approach could prepare the intellectual ground for its implementation.⁶⁰ This does not aim at creating another regional security arrangement, since there are plenty in existence.⁶¹ A possibility would be to merge and consolidate their output under an allied umbrella, such as a dedicated Northern Strategic Forum.⁶² Centring the common strategic orientation, such conventions could advance each participant nation's approach and its *ability to strategise* in an allied manner. To address and challenge national projections might eventually help in formulating a collective maritime attitude, which has to evolve into strategic concepts and operations, and nothing less.

Conclusion

This chapter has called for a broad and common allied naval approach towards Europe's Northern Flank. Whereas the first part delved into defining the region's basics and explained the relevance of addressing them with broad lenses, the second part, recalling recommended actions, touches on elements of deterrence, intellectual development and the implementation of operative needs. While selected recommendations for action are more distinct, some elements, due to the nature of formulating strategic propositions, maintain rather vague intentions. What becomes clear is that any strategic concept for the 21st century Northern Flank calls for frequent revision by strategic planners.⁶³ It remains relevant to bear in mind that any of the alliance's aims ultimately represents the collective agreements of its member states. Consequently, keeping up integrity and coherence is essential for its productive existence. Although governments change and partic-

60 See also: Jonathan D. Caverley and Peter Dombrowski, "Too important to Be Left to the Admirals. The Need to Study Maritime Great-Power Competition", *Security Studies*, vol. 29, issue 4 (2020), 579–600.

61 For a well-arranged depiction of the multitude of Northern-Baltic security arrangements and institutions, see Lange et al., "To The Seas Again", 3.

62 The Kiel International Seapower Symposia provide examples of high-level maritime strategy gatherings on neutral ground, which is either civilian or non-partisan.

63 Bergeron, 49–50.

ular attitudes vary, deep-seated alliances and their strategies *can* figure as guide rails for their member states' policies and, in case of doubt, recall their covenant values.⁶⁴ Hence, it is crucial to acknowledge a common Northern Flank approach as a merged and unified strategy of heterogeneous valuations. *Bridging the gaps*, symbolically speaking, is an adjuvant way of accomplishing such an approach.

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64 *ibid.*

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Like Butter Scraped Over Too Much Bread. The North Sea, Skagerrak and Kattegat—an Overlooked Region in Maritime Defence and Security?

Niklas Granholm

Introduction and aim—an emerging naval defence and security problem

Among the clearly observable global geostrategic shifts towards a less predictable security environment, discussion on the naval and maritime effects of this on Northern Europe is also on the increase.¹ One of the focal points is on the strategic development in the North Atlantic, the High North and the Arctic.² The follow-on effects in the seas adjacent to the North Atlantic, The North Sea, Skagerrak and Kattegat—henceforth the Western Seas—has so far received less attention. Maritime strategic trends there are affecting the whole of the Nordic region as well as the nations around the Baltic Sea and the North Sea, including Russia. The region is key to much of the trends as regards the naval and maritime domain for Northern Europe in several ways.

The aim of this chapter is to analyse the waters approaching and connecting with the Baltic Sea and the North Atlantic from the perspective of naval and maritime security. The functioning of the Sea-lines of Communication (SLoCs) is vital to the economic life of all the Nordic and Baltic Sea nations. Seaborne trade in and out of the region, as well as within it, is intense and increasing. From 2012 to 2019, transport work (ton-miles) for all categories of civilian cargo shipping through the North Sea increased by 12.2%, through Kattegat by 23.9% and through Skagerrak by 22.3%.³

1 I would like to extend my gratitude to several friends and colleagues, within and outside FOI, who contributed with insightful and constructive comments in various ways during the process of writing. You know who you are. Any remaining weaknesses remain entirely my own responsibility.

2 Magnus Nordenman, *The New Battle for the Atlantic. Emerging Naval Competition with Russia in the Far North*. (Maryland: Naval Institute Press, 2019).

3 Data compiled and supplied by Mr Torbjörn Rydbergh. Copyright ©, Marine Benchmark Gothenburg AB, 2021. All Rights Reserved, Source data: IHS Markit & Marine Benchmark. January 19, 2021.

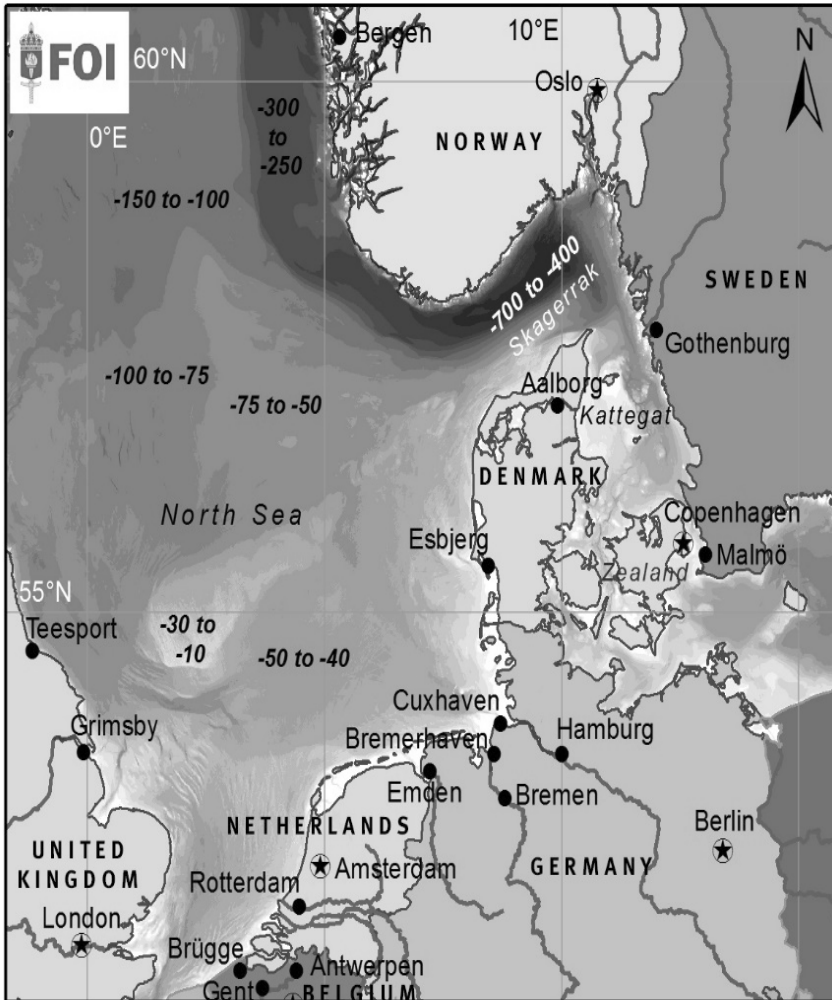
The highly IT-dependent nations rely heavily on telecommunications cables on the seabed. Pipelines for oil and natural gas, cables for large-scale offshore wind power hubs as well as electric transmission cables criss-cross the seabed, which further increases the importance of these seas. The region is an example of how the role of the sea itself is changing; energy generation, telecommunication as well as the region's intra-regional connections with the world beyond can be added to its classical role as a transportation route and as a base for the extraction of biological and fossil resources.

Maritime defence and security aspects are playing an increasingly central part in a period when both high-end conflicts and a spectrum of grey-zone confrontations are emerging. The aim of this chapter is thus twofold:

- To describe and analyse the problem of emerging maritime strategic challenges in the North Sea, Skagerrak and Kattegat.
- To discuss and indicate solutions to the problem. With what means and with which methods could the region be defended over a broad spectrum of conflicts?

The perspective is that of an analysis of the region mainly with a Swedish and regional outlook. If not otherwise indicated, the time perspective is ten years into the future.

Ports and water depths in The North Sea, Skagerrak and Kattegat. Map by FOI.



The North Sea, Skagerrak and Kattegat from a maritime and oceanographic perspective

Oceanographically, the Western Seas present highly varied conditions. The area from shallow waters of Dogger Bank in the North Sea with its rich fishing waters to the deep waters of the Norwegian trench with depths of

up to 700 metres complicates the laying of pipelines. The narrow straits of The Belt (*Store Belt*) and the Sound (*Öresund*), present challenging conditions for shipping. Three archipelagos are also part of the picture: the Frisian Islands, the Gothenburg archipelago and Heligoland. Sea conditions are often rough and varied. Tidal waters with strong currents at times also form part of the nautical conditions.

The Western Seas are central to all nations in the adjacent Baltic Sea region. With its population of around 100 million and vibrant and modern economies, seaborne trade has increased substantially in the past few decades. At any given moment, around 2,000 ships operate in the Baltic Sea. The region of western Scandinavia, Oslo and the adjacent counties *Bohuslän*, the city of Gothenburg, *Halland* and *Skåne* on the Swedish west coast, is in itself a mega-region, generating substantial parts of Norwegian and Swedish GDP.⁴ The waterways connect the Western Seas and the Baltic Sea with the North Atlantic and the world oceans.

Several of Europe's major ports in the supply much of the imports for Northern Europe and beyond, plus the exports for a just-in-time dependent region. Along with other ports, they uphold a network vital to economic life, prosperity and security.

With the end of the Cold War, far-reaching retrenchment of navies and military forces followed.⁵ The shifting priorities for maritime security operations also had long-term perceptual and conceptual effects on European navies. They refocused and prioritised Maritime Security Operations (MSO), while high-end operations were mostly relegated to second or third priority. Combined with extensive retrenchment, officers and planners were not able to transfer their expertise to the next generation. In several Western navies, this shift of priorities led to a loss of tactical, operational and strategic knowledge.

With deteriorating strategic trends, the capability gap has exposed security and defence problems. With attempts to address the problem of defending SloCs leading to the west coast and into the Baltic Sea in conditions of grey-zone as well as high-end warfare, and developments in the region as a route for energy- and telecommunications, the Western Seas now

4 Lars Wedin and Odd Werin, *Vår marin för ett tryggt Sverige och ett starkt Europa. Marin Strategi 2030*. (Our Navy for a Secure Sweden and a Strong Europe. Naval Strategy for 2030). (Stockholm: Royal Swedish Academy of War Sciences, 2020), 32.

5 Jeremy Stöhs. *Decline of European Naval Forces. Challenges to Sea Power in an Age of Fiscal Austerity and Political uncertainty*. (Maryland: Naval Institute Press, 2018).

qualify as congested, cluttered, contested, connected and constrained—a maritime C5-region.⁶

The Western Seas—maritime-strategic developments and capabilities

This section discusses the problems of naval strategic trends versus available resources with brief overviews of the relevant navies in and outside the region.

The aforementioned regional confrontation stems not least from the build-up and partly new profile of the Russian navy, supported by updated naval doctrines.⁷ The Russian Northern and Baltic fleets now operate with more self-confidence, with improved coordination, growing in capability and numbers, and with a dynamic, flexible, offensive and at times aggressive stance in the region.⁸ In addition, China is emerging as a new naval global strategic actor. With rapidly increasing naval capabilities, China already intermittently operates in the region. It seems likely that its activities in the region will increasingly become a part of the operational pattern in the coming decade.

The globally dominant US Navy sees a difficult road ahead with several major and simultaneous long-term strategic challenges.⁹ From its core strategic naval priority with China in the Pacific region and a more assertive Russia, a demand for presence and operations in the Arctic as well as an increasingly demanding operational environment in the North Atlantic have emerged. With the reinstatement of the US Navy 2nd Fleet in 2018, the issue of resourcing has come into focus. Balancing naval assets for operations in the main US theatres will be complicated, not least regarding their allocation to this European region. Added to the mix are technological developments, their integration and possible quantum leaps with po-

6 United Kingdom Ministry of Defence. *DCDC, Strategic Trends Programme. Future Operating Environment 2035*. (First edition, 2015). 44.

7 Jonas Kjellén. *The Russian Baltic Fleet – Organisation and Role Within the Armed Forces in 2020*. (Stockholm, February 2021. FOI-R-5119—SE). Douglas Barrie and James Hackett (eds.). *Russia's Military Modernisation. An Assessment*. (London: International Institute for Strategic Studies, 2020). 91–116.

8 The Economist. *Naval strategy. Northern Fights*. (London: 16 May 2020). 19.

9 United States Department of the Navy. *Advantage at Sea. Prevailing with Integrated All-Domain Naval Power*. December 2020.

tentially far-reaching implications for structure, concepts and ship design, with budgetary challenges to boot.¹⁰

For the Royal Navy, with its long tradition of operations in these waters, including the Baltic Sea, the Western Seas form one part of the demands placed upon its naval forces. The link to a post-Brexit “Global Britain”, in part a search for a new role, also implies an increased call for more naval capabilities in the North Atlantic, the High North and elsewhere.¹¹ Numbers will matter—operational demands and technological shifts mean that this circle will not be easy to square. How many resources will be available for the Western Seas therefore remains an open question. For the Royal Navy, available resources for the global challenges that are too thinly spread mean that setting priorities will be complicated. Recently announced investments in new surface combatants will go some way to addressing this, but will take time to have an effect. Similarly to other navies, technological challenges abound. On balance, there does not seem to be a short to medium-term solution to the Royal Navy’s resource-demand problems.

The German *Deutsche Marine* has seen a turnaround in recent years. Its previous high operational priorities on Maritime Security Operations (MSO) with a global scope have shifted to a primary focus on the Baltic Sea and the North Atlantic. To support Baltic Sea operations, Germany has set up a Baltic Maritime Component Command (BMCC) in Rostock with the aim of coordinating naval operations from there.

Funding has also increased. This has enabled investments in a second batch of five K 130 *Braunschweig*-class corvettes in addition to the five already operational. The readiness of the submarine arm has increased from a very low level and the *Seebatallion* is transforming into an amphibious corps with the support of the Dutch *Korps Mariniers*. When the replacement of existing maritime patrol aircraft is due, the naval air component may also be renewed. In order to increase retention rates, wages for sailors have been raised.

Further modernisation of the fleet is also underway with the new Multi-Purpose Combat Ship (*Mehrzweckkampfschiff* 180), MKS 180, and the recently renamed Frigate class 126. The class is designed for intensive usability.

10 United States Navy, Chief of Naval Operations. *CNO NAVPLAN 2021*. January 2021.

11 Chief of Defence Staff General Nick Carter describes one of the tasks for the British Armed forces as holding Russian forces “at risk” in the High North, The Baltic Sea and the Black Sea. Nick Carter. *Annual Chief of the Defence Staff Lecture 2020*, (Whitehall: Royal United Services Institute, 18 December 2020).

ty, with a modular design and multi-crew-concept similar to the Baden-Württemberg frigate class. The first of the four in the new 126-class is due for delivery during 2027.

The current federal CDU-SPD coalition government supports this increase in German naval capabilities. The government sees the navy as an important component of the armed forces. From the outside, bureaucratic impediments seem to be slowing the process.

Denmark regards the Royal Danish Navy (RDN) as a national strategic instrument for international influence. Maintaining transatlantic relations with close allies is key in this context, where the RDN plays a central role.¹² In addition, emerging challenges in the North Atlantic and around Greenland are impacting on strategic priorities. Carrier group-escort tasks with the US Navy and Royal Navy, SloC-defence, sovereignty support of Danish overseas territories and MSOs are high on the priority list. Denmark thus currently places the North Sea, Skagerrak, Kattegat and the Danish Straits lower on its list of operational priorities, and has all but abandoned operations in the Baltic Sea. To meet the need for more capabilities in the North Atlantic, its surface fleet is being upgraded through the re-roling and equipping the flexible support ships (*Flexible Støtteskibe*) of the *Absalon*-class to serve as ASW-frigates. Similarly, the *Iver Huitfeldt*-class is being redeployed as AAW-frigates. These changes are covered in the 2018–2023 agreement on Danish defence development. The RDN is striving to become an Integrated Air and Missile Defence Navy (IAMND).¹³ Added to that picture are shrinking MCM resources, which has implications for international shipping through the Danish Straits. Given the limited funds available and other big-ticket investments, such as the F-35 system for the RDAF, these are ambitious tasks.

The Royal Norwegian Navy (RNoN) has its main operational focus in the High North. The Russian naval and military build-up of the Northern fleet guides much of Norway's naval and military focus, while opening up more scope for Nordic military cooperation.¹⁴ Over the past two decades, most of Norway's naval and military assets have moved from southern Norway to the north. The end of the Cold War had also led to substantial

12 Johannes Riber. *The Royal Danish Navy. How Small States Use Naval Strategy*. In *Europe, Small Navies and Maritime Security. Balancing Traditional Roles and Emergent Threats in the 21st Century*. Eds. Robert McCabe, Deborah Sanders, Ian Speller, (Abingdon, Routledge 2019). 152–167.

13 Edward Lundquist. "Royal Danish Navy becoming a missile defense force by design". *Tidsskrift i Sjøvæsenet*, No. 3/2020.

14 Sverre Diesen. "En for noen, noen for én". *Norsk Militært Tidsskrift* nr. 4/2020.

overall retrenchment of the Norwegian armed forces. Few resources—surface combatants and MCM resources—are available for operations in her southern waters.

In December 2020 the Swedish Parliament decided on a five-year defence bill after a long process of political wrangling.¹⁵ The bill will increase defence spending steeply to about 1.5 % of GDP by 2026, an increase of about 40%. A build-up of the Swedish armed forces began in the wake of Russia's war on the Ukraine from 2014 and continues onwards. This adaption will take time and is seen by many as insufficient.

For the Royal Swedish Navy (RSwN), the 2020 Defence Bill will mean a modest increase in capabilities. A new, more modern and seagoing amphibious corps battalion is returning to Gothenburg, with new and more capable anti-ship missile carrying boats. The number of submarines will increase from four to five, and the first two in a new class of surface combatants will be developed. Existing surface combatants of the *Visby*-class corvettes will receive a mid-life upgrade and surface-to-air missiles will finally be added. Four older corvettes will get life-extensions with their anti-ship missile capabilities retained. The land-based anti-ship missile capability is being modernised. Importantly, mobile land-borne and ship-borne logistic capabilities will increase.

The decades-long retrenchment of the Swedish armed forces means that deficiencies in numbers and capabilities are substantial. The RSwN is no exception, and this will take time and funding to address. The Swedish naval and maritime defence debate has called for a substantial increase in the number of platforms and capabilities, and points out the high average age of platforms.¹⁶ Accordingly, there will be a fair amount of “expectation management” in explaining the modest increases.¹⁷ An increased but limited naval presence on the Swedish west coast will follow, but the classic Swedish defence dilemma relating to the allocation of scarce naval resources, either for the west coast or for the Baltic Sea, remains unsolved. Due to the scarcity of platforms and capabilities, Sweden can either be supplied in the west or defended in the east. Assets for MSOs will also remain limited. This is an unenviable situation, both in grey-zone and high-end conflict scenarios. To mitigate the west coast problem, Sweden is seeking

15 Government of Sweden. *Regeringens proposition 2020/21:30. Totalförsvaret 2021–25*. Stockholm 14 October 2020.

16 Kungl. Örlogsmannasällskapet. *En marin för Sverige* (A Navy for Sweden), (Stockholm: Printfabriken, 2018).

17 RADM Ewa Skoog Haslum, Commander of the RSwN. Interview, Stockholm, 2 December 2020.

enhanced cooperation with Nordic partners, mainly Denmark and Norway.¹⁸ Moreover, statements in late December in parliament by the minister for defence that “...Sweden will as far as possible, develop joint operational planning with Finland and coordinated planning with Denmark, Norway, the United Kingdom, the United States and Nato” are noteworthy. The limits set by the Swedish Cold War declaratory policy of neutrality are clearly a thing of the past.¹⁹ There is also a realisation of the inherent flexibility of naval forces—their fungibility—indicating their value in a less predictable strategic climate.²⁰

The increases in RSwN capabilities for the next five years will lead to it becoming a more robust organisation. While the writing in the defence bill argues for the importance of the western region as a critical supply route and the need for a more assertive stance on the Swedish west coast, corresponding investments are as yet mostly lacking.

Nato/PfP exercises in Northern Europe have increased substantially, both in number and in complexity since 2014.²¹ Most of the exercises have had a geographic focus in the Baltic Sea region and the High North. Few seem to have taken place in the Western Seas. Strategic sealifts have so far played a small part in logistic support exercises for forces in Europe.

To summarise, naval resources for the Western Seas will remain scarce in the near-term. The North Atlantic and the Arctic Ocean theatres are in focus. Naval and military trends in the Pacific act as an attractor for resources for navies like the US navy, and to an extent for the Royal Navy. The Nordic navies either have their focus elsewhere or are not resourced in relation to emerging trends. Nato has so far prioritised exercises elsewhere than the Western Seas.

18 Mr Peter Hultqvist, Minister of Defence. Interview, Stockholm, 16 December 2020.

19 Jonas Gummesson. “Försvarsmakten redo hjälpa till med vaccineringen mot covid-19”. (The armed forces stand ready to contribute to vaccination against covid-19), *Svenska Dagbladet* (10 January 2020). 8–9.

20 Dr. Pål Jonson. Chairman of the Defence Committee, Swedish Parliament. Interview, Stockholm, 3 December 2020.

21 Albin Aronsson and Björn Ottosson. *Västlig militär övningsverksamhet 2014-2019 Anpassning, utveckling och framsteg*. (Western Military Exercises 2014–2019—Adjustment, Development, and Progress). (Stockholm: Swedish Defence Research Agency, March 2020), FOI-R—4875—SE.

Technology—quantum leaps or slowly maturing?

Naval technologies are developing fast. Some systems are developing more slowly, while others are characterised by quantum leaps that, in a short time, may render much of existing systems outdated. These trends will affect all navies, types of platforms, their design, numbers and systemic structure. Development and operation of high-end naval platforms are capital-intensive. With a life cycle of several decades, deciding on their design and choosing systems in a technologically dynamic time are daunting tasks. Several of the navies discussed here also operate platforms that need replacing within a ten to twenty-year period. How can the development of risky and “future-proof” naval platforms and systems be mitigated? While complexity and dynamic technological trends increase the risk of mistakes, they can also provide opportunities. For naval defence and security in the Western Seas, this also opens up several possible combinations of new and old technologies for systemic effect. The problem of balancing risk–benefit–opportunity is as obvious as it is complicated.

A great number of trends in technology for the naval sector are already available or are about to take significant steps forward.²² Among them, maturing networked systems enable different platforms to provide substantially higher threshold capabilities. This can give advance warning when available scarce resources are deployed in both lower-level and high-end conflicts.

Sensors are also developing. For UUVs and USVs, substantially larger grids of connected sensors are becoming available. Combined with improved underwater communications connected with effective networks, these will become a substantial addition to naval operations.

For surface platforms, the trend is towards developing two main types: “thoroughbreds” for high-end conflicts and “workhorses” for sustainable long-term operations and protection of SloCs. In practice, a high–low mix of platforms is underway in many navies, due to their high development costs. A second trend is the increasing coordination between and integration of sea and air power due to the rising cost of platforms driving numbers further down. A third trend points to longer ranges and increasing precision for ship-borne and land-based surface-to-surface missiles, with in-

22 Göran Kindvall and Anna Lindberg (eds.) *Militärteknik 2045. Ett underlag till Försvarsmaktens perspektivstudie*. (Military Technology 2045. Report for the Armed Forces long-term study). (Stockholm: Swedish Defence Research Agency, November 2020). FOI-R—4985—SE. 181–200.

flight target data communication being an additional factor in design. In addition, supersonic, possibly also hypersonic, missiles need to be taken into consideration. This points to missiles that are likely to be bigger, which will increase the demand for ships with bigger hulls to accommodate them. A fourth trend is for substantially increased demand for electric power. Ship-borne laser weapons, electromagnetic rail guns (EMRG), High-Power Microwave (HPM) as well as all-electric propulsion will also impact design. The need for ammunition storage, electric power, re-supply, etc. will likely need to be balanced differently. The trend towards fossil-free propulsion is also likely to spill over from civilian shipping into the naval sector.

For the subsurface domain, submarines remain the most advanced and expensive category of platforms and they continue to offer substantial deterrent capabilities. Improved underwater communications are also likely to bring advantages in mine detection and mine clearing. The underwater domain is also benefiting from developments leading to increasingly networked, unmanned, distributed and autonomous concepts. This in turn indicates that platforms with these capabilities will become more common.

The topic of trends in technology is vast and cannot be comprehensively discussed here, but the questions they raise clearly merit further analysis. In what way can fast-developing technological trends be utilised to contribute to solutions to the defence and security problems in the Western Seas? What are the challenges they pose? What technological solutions are available and in what time frames so that deficits in capabilities and numbers can be addressed?

Solutions—systems, combinations and cooperation

The analysis above points to a number of complicated and complex problems for naval and maritime defence and security in the Western Seas. The main questions for this chapter were:

- To describe and analyse the problem of emerging maritime strategic challenges in the North Sea, Skagerrak and Kattegat.
- To discuss and indicate solutions to the problem. With what means and with which methods could the region be defended over a spectrum of conflicts?

The region is facing a substantial number of challenges as a follow-on effect to global strategic trends. It also seems likely that Russian and proba-

bly Chinese naval forces will be increasingly active in the region, while the US Navy, the strongest navy with a global reach, has its main focus on the Indo-Pacific region. In a similar manner, regional navies are either overextended, too weak or have their main operational priorities somewhere else. Fast-developing technological trends further add to these challenges.

Expanded and deepened naval cooperation would provide part of a solution in order to make the best use of scarce resources over a spectrum of grey-zone confrontations up to and including armed conflict. The first and most obvious contribution would be to set up or enhance existing cooperative arrangements. Successful models already exist. For the Baltic Sea, Sweden and Finland operate a joint naval task group—the SFNTG—with a high level of tactical integration and with strong support from both countries' capitals.²³ A similar set-up could be replicated for the Western Seas with contributions from relevant navies.

Nato's existing naval forces and formats could also be considered: the Nato Response Force (NRF) through MARCOM, using Standing Maritime Groups one and two (SNMG 1 & 2) and the Standing Naval Mine Countermeasures Group one (SNMCMG 1), the Naval Striking and Support Forces NATO (STRIKEFORNATO) and not least the Very High Readiness Joint Task Force (VJTF). Outside Nato, the Joint Expeditionary Force (JEF) and the cooperative format of The Northern Group of nations should also be considered. Possibly, the Nordic Defence Cooperation (NORDEFCO) could be another format to consider.

The trend towards more task group operations and away from single-ship operations among Western European navies further points to the advantages of such arrangements. A dedicated task group for the North Sea, Skagerrak and Kattegat (NSKTG) could be set up under a regional arrangement, manned under a time-sharing scheme by the navies in the region, while remaining flexible in content and open to contributions from other nations as required. A CONOPS requirement for such a task group is that it should be able to continuously share tactical and operational intelligence in order to enable timely dispositions. To manage a broader spectrum of tasks—from grey-zone situations up to and including high-end conflict—a high-resolution regional Recognized Maritime Picture (RMP) would be a necessary requirement with relevant coastguard capabilities integrated into the concept.

23 Lee Willett. "The Role of Task Groups in Baltic Security". *Tidskrift i Sjöväsendet* No.4/2020. 341–345.

The German Navy could add further capabilities to such a solution. It is likely that the German naval build-up will continue. The Baltic Maritime Component Command (BMCC), primarily focused on the Baltic Sea, could be given the additional task of coordinating regional activities in the Western Seas. Denmark and Norway could contribute with available resources and not least with their regional expertise. The Royal Navy is also a substantial actor in the region. The recently announced investment in naval capabilities will begin to take effect late in this decade.

Lastly, Sweden needs to take a step forward. A continuous naval presence on its west coast is coming from available force levels, with additions in the 2020 Defence bill.²⁴ However, this will not suffice. The number of surface combatants and submarines will increase only marginally and from low numbers. The new amphibious unit is a welcome and necessary component. What is urgently needed is an increased MCM-capability and clarity on new capabilities, not least regarding helicopter-borne ASW. The number of surface combatants also needs to increase. Investments in UUVs, UAVs and USVs should also be included.

To optimise decisions on which technologies and systems to invest in, there is a need for a sorting mechanism. To discuss and evaluate new technologies and systems, three factors need to be included: cost, time and operational effect. An expensive system might be difficult to accommodate within limited budgets. How long it takes to develop and integrate a system also matters. Is the need urgent, or is it more of a long-term development programme? Lastly, what operational effect would a new system or technology add to the force structure? These three factors should form part of an iterative process of evaluation that, in turn, needs to be a component in interaction with theoretical and practical circumstances when Sweden is developing a coherent naval and maritime strategy.²⁵

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The current situation regarding resources and assets vis-à-vis challenges for the naval and maritime problems in the Western Seas may seem “...like butter scraped over too much bread”. However, a broad set of methods for

24 Interview, RADM Ewa Skoog Haslum, Commander of the RSwN. Stockholm, 2 December 2020.

25 Geoffrey Till. *The Accidental Dialectic: The Real World and the Making of Maritime Strategy Since 1945*. in *Conceptualizing Maritime & Naval Strategy. Festschrift for Captain Peter M. Swartz, United States Navy (ret.)*. Sebastian Bruns and Sarandis Papadopoulos (eds.). (Baden-Baden, Germany: 2020). 13–32.

solutions is available. A combination of technological foresight, intensified multinational dialogue and bilateral and multilateral cooperation to avoid ingrained habits of bureaucratic stove-piping is needed. Not least, increased insight among policymakers is required to grasp the emerging strategic maritime problems in a less predictable world.

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Allied Maritime Strategy in the Arctic in the 21st Century

Pauline Pic and Frédéric Lasserre

Introduction

The Arctic is an increasingly important area on the global stage, now attracting global interest. Observers acceding to the Arctic Council (AC) span from the much commented on China, to the UK, Singapore or the latest applicant, Estonia. International conferences about the Arctic draw together actors interested in the region from all over the world: in 2019, the latest Arctic Circle conference held in Reykjavik (the 2020 edition being cancelled because of the Covid-19 pandemic) attracted more than 2,000 participants, from more than 60 countries.¹ Strategies for the Arctic region are thus gaining more and more importance, and many countries—even located outside the Arctic Circle—have set up dedicated ones.²

Very early in the 20th century, Sir Julian Stafford Corbett emphasised that maritime strategy should be considered from two complementary perspectives: what he coined as ‘Grand strategy’ on the one hand and which referred to the purpose of war; and on the other hand, what he called ‘minor strategy’, with more of an operational point of view.³ Corbett is especially known for having put forward the need to understand the utility of sea power even in limited war.⁴ Very early on, sea power appeared to be linked to economic practices, in a way that land warfare was not—which is why navies could be used to “secure trade, exercise political influence without necessarily resorting to war, and to apply sea power to sustain order at sea”.⁵ Most Arctic strategies, whether they are published by a specific actor

1 "2019 Assembly," 2019, accessed January 7, 2021.

2 Lassi Heininen et al., *Arctic Policies and Strategies—Analysis, Synthesis, and Trends*, IIASA (Laxenburg, Austria, 2020).

3 Julian S. Corbett, *Some Principles of maritime strategy* (London: Longmans, Green and Co., 1911).

4 Barry M. Gough, "Maritime strategy: The legacies of Mahan and Corbett as philosophers of sea power," *The RUSI Journal* 133, No. 4 (1988).

5 Hew Strachan, "Maritime strategy and national policy," in *The Direction of War: Contemporary Strategy in Historical Perspective*, ed. Hew Strachan (Cambridge: Cambridge University Press, 2013), 157.

—such as the Coast Guard or the Navy—or address several domains with a large scope, share the same priority: keeping the ‘High North, Low Tension’ paradigm alive. To paraphrase Corbett, ‘Limited war’, or rather peacekeeping, is thus a priority in the Arctic, and maritime strategies will be considered from this perspective. Our work will then be centred around the following questions: what kind of maritime challenges do we face in relation to the Arctic in the 21st century and how can we best address them?

Maritime Challenges in the Arctic: Beyond Traditional Security

Security in international relations theory is a widely debated concept, with many different definitions. For the purpose of this chapter, we will consider traditional security as military security and non-traditional security as issues going beyond the traditional scope of the military, such as environmental security.⁶

Traditional security: the return of great power competition in the Arctic?

The return of great power competition in the Arctic is a recurring topic in the mainstream media. One can often read, for example, that “a new Cold War is brewing in the Arctic”.⁷ Recent political developments might suggest that great power competition is back in the region, after a period of low tension that started even before the end of the Cold War. In 1987, when Mikhail Gorbachov pronounced his now famous Murmansk speech, he called upon Arctic nations to maintain the Arctic as a “zone of peace”.⁸ Cooperation and multilateral dialogue became the norm and crises were relatively well weathered. Even after the Ukrainian crisis in 2014 and West-

6 Gunhild Hoogensen Gjørsv et al., "Introduction: can we broaden our understanding of security in the Arctic?," in *Environmental and Human Security in the Arctic*, ed. Gunhild Hoogensen Gjørsv et al. (London: Taylor & Francis, 2013).

7 Neil Shea, "A thawing Arctic is heating up a new Cold War," *National Geographic*, August 2019.

8 Kristian Åtland, "Mikhail Gorbachev, the Murmansk Initiative, and the Desecuritization of Interstate Relations in the Arctic," *Cooperation and Conflict* 43, No. 3 (2008).

ern sanctions towards Russia, cooperation remained effective.⁹ Dialogue was altered, but the “mosaic of cooperation”¹⁰ that existed maintained a certain degree of dialogue.¹¹ Hard security, being evacuated of the main regional forum—the Arctic Council—, was virtually a non-issue.¹²

In recent years, however, some elements might suggest the evolution of the situation. On the eve of the AC’s ministerial meeting of 2019, Mike Pompeo, Secretary of State in the Trump administration made a remarked speech stating that great power competition was back in the Arctic, blaming Russia and China especially.¹³ Recently published US strategies also underline this change. The US Navy’s (USN) strategic outlook for the Arctic, for example, reads that “there are recognized threats, opportunities, and risks in our return to an era of Great Power Competition”.¹⁴ The US Coast Guard’s (USCG) strategic outlook for the Arctic makes a similar assessment.¹⁵ For Lawson Brigham, former career Coast Guard officer, the USN and USCG had to align their views and strategies with the Trump administration’s great power rivalry policy in the Arctic. This policy was articulated by the State and Defense departments. Both the USN and USCG were then able to argue for increased funding to carry out this more focused policy.¹⁶ It appears, however, that traditional security issues are becoming important for other actors. The Swedish Arctic strategy, published in autumn 2020, is a good example: an entire chapter of it is dedicated to security issues, whereas that was not the case in the previous strategy.¹⁷ At the launch event, the Swedish Minister of Foreign Affairs, Ann Linde, stat-

9 Juha K  pyl   and Harri Mikkola, *On Arctic Exceptionalism. Critical reflexions in the light of the Arctic Sunrise case and the crisis in Ukraine*, FIIA Working Paper, (Helsinki: The Finnish Institute of International Affairs, 2015).

10 Oran R. Young, "Governing the Arctic: From Cold War Theater to Mosaic of Cooperation," *Global Governance* 11, No. 1 (2005).

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13 Mike Pompeo, *Looking North: Sharpening America's Arctic Focus* (Rovaniemi, Finland, 6 May 2019).

14 US Navy, Strategic Outlook for the Arctic, 6 (Washington 2019).

15 US Coast Guard, Arctic Strategic Outlook, (Washington 2019).

16 Lawson Brigham, Personal communication (Wilson Center, Washington, 5 February 2021).

17 Government offices of Sweden, Sweden's strategy for the Arctic region, (Stockholm 2020).

ed that this new strategy “reflects the deteriorating security environment” and while it was not a security strategy, “security was an important dimension of it”.¹⁸

Beyond Arctic strategies, several signals can potentially reveal a deteriorating—or at least changing—security environment. In autumn 2020, Nordic ministers of defence signed a statement of intent on enhanced operational cooperation.¹⁹ At the signing of this trilateral agreement, the Swedish Minister of Defence, Peter Hultqvist, stated that “on the military side, we clearly see a Russian buildup in the Kola Peninsula, a troop building up in Arctic region and it includes both the Navy, Air Force and the Army”,²⁰ signalling a new level of Russian activity in the Arctic. As Danielle Cherpako puts it: “Between 2014–2020, Russia has demonstrated complex military exercises, and has invested heavily in Arctic-specific equipment, showing an ability to operate and adapt to changing conditions within an Arctic environment”,²¹ with actions ranging from military exercises, such as the 2018 exercise on Franz Joseph Land, to mock attacks such as the one launched on the Norwegian Arctic radar installation in February 2018. Data from the SIPRI military expenditure database shows a significant increase in military expenditure by Russia at the turn of the 2010s. They estimate that in 2010 it represented about 49m \$US, culminating in 2016 with a budget of 79m \$US.²² In 2019, though, their data estimates a 65m \$US budget, signalling a relative decrease. However, military activity, expenditure, equipment and infrastructure remain at a lower level than they ever were during the Cold War.²³

NATO and allied countries also conducted several exercises in the Arctic, such as the Trident Juncture exercise of 2018, hosted by Norway. A Cold Response exercise was planned for 2020 but had to be postponed due to the pandemic. Those are signals, among many others, that could indicate the return of Great Power competition in the Arctic, as defined by

18 H. E. Ann Linde, “Sweden's New Arctic Policy,” ([Online], 16 November 2020).

19 Ministry of Defence of the Republic of Finland, Ministry of Defence of the Kingdom of Norway, and Ministry of Defence of the Kingdom of Sweden, Statement of Intent on Enhanced Operational Cooperation, (Porsangmoen 2020).

20 Atle Staalesen, “It is time to strengthen Nordic security, say ministers as they sign landmark defence deal,” *The Barents Observer*, September 24 2020.

21 Danielle Cherpako, *What is Russia Doing in the Arctic?*, NAADSN (Peterborough, 2020), 6.

22 SIPRI, “SIPRI Military Expenditure Database,” (Stockholm: Stockholm International Peace Research Institute, 2020).

23 Lincoln Edson Flake, “Russia's Security Intentions in a Melting Arctic,” *Military and Strategic Affairs* 6, No. 1 (2014).

Wohlforth, arising “out of a power shift in favor of a rising state dissatisfied with a status quo defended by a declining satisfied state”.²⁴ Some observers even suggest that signs point to an arms race in the Arctic, where “enduring rivalries between pairs of hostile powers [...] prompt[s] competitive acquisition of military capability”.²⁵ We would like to underline, however, that such claims have to be viewed with caution as cooperation remains the norm in the region. Arctic actors, until very recently, defined policies to ensure environmental security, and to protect and control open maritime spaces. This was not done as a reaction to another actor’s actions, precisely trying to avoid any security dilemma.²⁶

A Changing Arctic Environment

Several experts and researchers have expressed concern, for example, over new US strategies which ignore climate risks²⁷. Those risks should not be ignored or discarded as secondary: they also have major security implications.

On the environmental side, there is overwhelming evidence that the Arctic climate is changing fast.²⁸ From an oceanic perspective, the main consequence is the decline of sea ice,²⁹ meaning that the Arctic Ocean is increasingly becoming an open sea. Several models show that the ocean could be completely ice-free in summer in the near future.³⁰ This is bound to have consequences on human activities in the Arctic. For local populations, that means very important adjustments in terms of traditional livelihoods, health and food security, to name a few. At the international level,

24 William C. Wohlforth, "Unipolarity, Status Competition, and Great Power War," *World Politics* 61, No. 1 (2009).

25 Ron P. Smith, "The Influence of the Richardson Arms Race Model," in *Lewis Fry Richardson: His Intellectual Legacy and Influence in the Social Sciences*, ed. Nils Petter Gleditsch (Cham: Springer International Publishing, 2020), 25.

26 Kristian Åtland, "Interstate Relations in the Arctic: An Emerging Security Dilemma?," *Comparative Strategy* 33, No. 2 (2014/03/15 2014).

27 Melody Schreiber, "New US Arctic strategies ignore climate risks in focus on geopolitics, experts say," *Arctic Today*, 20 January 2020.

28 ACIA, *Arctic Climate Impact Assessment* (Cambridge: Cambridge University Press, 2005).

29 Josefino C. Comiso et al., "Accelerated decline in the Arctic sea ice cover," *Geophysical Research Letters* 35, No. 1 (2008).

30 James E. Overland and Muyin Wang, "When will the summer Arctic be nearly sea ice free?," *Geophysical Research Letters* 40, No. 10 (2013).

it means that access to and through the Arctic will become easier, allowing the development of shipping and resource exploitation. We are far from the resource Eldorado often mentioned by the media,³¹ neither can we expect actual polar seaways in the near or even mid-term future.³² However, the increased accessibility of the ocean and the resulting heightened global attention on it has consequences on its strategic environment, as states want to both control these more accessible maritime areas to prevent any traffic or illegal activity (navigation, fishing, exploration, illegal traffic), and to prevent accidents and pollution.

This could have direct consequences on allied capabilities in the North as they rely on critical infrastructure to support activities and the transportation of human resources. Melting permafrost and the increased presence of drifting sea ice, due to its declining age, translate into numerous complications for infrastructure. Research shows that the changing Arctic climate could affect about 15 to 20% of the existing infrastructure by the beginning of 2059; for airports specifically, about 26% of assets are expected to experience damage.³³

Another major consequence of the changing climate is the increased attention that the region is getting. Many non-Arctic states now have official Arctic strategies. They are not only getting involved in the region through their observer status in the AC, the main regional forum, but also via the funding of scientific research or the negotiation of international agreements. The International Agreement to Prevent Unregulated Fishing in the High Seas of the Central Arctic Ocean, for example, was signed by Canada, Iceland, Denmark, Norway, the US, the Russian Federation but also China, Japan, South Korea and the EU. The region is increasingly becoming a 'global region'. This growing interest from third parties can enable the development of renewed cooperation in Arctic governance, but it has also elicited a growing fear among Arctic states that newcomers, especially China or India, would position themselves as game changers, with a

31 Frédéric Lasserre and Pauline Pic, "Ressources naturelles. Une évolution contrastée face aux fortes contraintes du marché mondial," *L'Année Arctique* (2020).

32 Frédéric Lasserre et al., "Polar seaways? Maritime transport in the Arctic: An analysis of shipowners' intentions II," *Journal of Transport Geography* 57 (2016); Frédéric Lasserre and Sébastien Pelletier, "Polar super seaways? Maritime transport in the Arctic: an analysis of shipowners' intentions," *Journal of Transport Geography* 19, No. 6 (2011).

33 Luis Suter, Dmitry Streletskiy, and Nikolay Shiklomanov, "Assessment of the cost of climate change impacts on critical infrastructure in the circumpolar Arctic," *Polar Geography* 42, No. 4 (2019/10/02 2019).

view to changing the norms of governance and asserting political ambitions in the region.³⁴ How can NATO position itself in front of this wide array of challenges, while maintaining a political status quo where cooperation remains the norm?

Managing Allied Maritime Challenges in the 21st Century Arctic

"The importance of the Arctic is increasing for several reasons. Partly because we see more Russian presence up in the Arctic. We see also China is increasing their presence in the Arctic. [...] And, of course, the melting of the ice means also that the whole geography is going to change, because it will be easier to have economic activity, sea lines of communications and so on [...]. So this is changing the whole importance of the Arctic."³⁵

Those words, pronounced by Jens Stoltenberg on the occasion of a conference held for the 70th anniversary of NATO, sum up many of the challenges for the Arctic in the 21st century. Drastic changes in the Arctic's strategic environment and types of threat have questioned the very relevance of the organisation. And for a while, NATO was absent from the region as diplomatic activities took centre stage at the end of the Cold War. NATO's return on the Arctic stage was very low-key, with a first seminar organised in Reykjavik in 2009—probably partly as a reaction to Moscow's flag planting episode on the oceanic floor of the North Pole in 2007.³⁶ Later on, the NATO Parliamentary Assembly discussed security in the Arctic, producing a report in 2017.³⁷ In June 2020, Jens Stoltenberg explicitly referenced the Arctic at the launch of the NATO 2030 initiative.³⁸ It does seem that the

34 Oran R. Young, "Is It Time for a Reset in Arctic Governance?," *Sustainability* 11, No. 16 (2019); Per Erik Solli, Elana Wilson Rowe and Wrenn Yennie Lindgren, "Coming into the cold: Asia's Arctic interests," *Polar Geography* 36, No. 4 (2013/12/01 2013).

35 Jens Stoltenberg, "NATO Engages: Innovating the Alliance – Q&A," 3 December 2019.

36 Helga Haftendorn, "NATO and the Arctic: is the Atlantic alliance a cold war relic in a peaceful region now faced with non-military challenges?," *European Security* 20, No. 3 (2011).

37 NATO Parliamentary Assembly, *NATO and security in the Arctic*, NATO (Brussels, 2017).

38 Jens Stoltenberg, "Remarks by NATO Secretary General Jens Stoltenberg on Launching #NATO2030 – Strengthening the Alliance in an Increasingly Competitive World", NATO (8 June 2020).

Arctic remains on NATO's agenda, though maybe in a less visible manner. Even though there is no official NATO Arctic strategy, reflection has been focused on the alliance's operational planning and the organisation is seeking to assert its presence in the region through regular large-scale exercises, such as Trident Juncture, or the establishment of a new Joint Force Command for North Atlantic and High North operations in Norfolk, Virginia.

The Arctic cannot, however, be understood as a monolithic security region. Five of the eight Arctic states are part of NATO and don't necessarily see eye to eye on how the organisation should be involved in the region. Norway, for example, sees NATO as the cornerstone of its security, and has indeed faced an increase in Russian air military activity since 2014, as have Finland and Sweden. Canada, on the other hand, strongly resisted any involvement by the organisation in the North, or even any mention of the Arctic in official NATO documents.³⁹ As far as non-traditional security is concerned, during the Lisbon summit, where NATO's new strategic concept was presented in 2010, climate change was briefly mentioned, without any explicit link to the Arctic, as per Canada's request.⁴⁰ For Euro-Atlantic security, the Arctic remains a highly strategic region. Duncan Depledge therefore argues that NATO should be more consistent in its definition of the Arctic, being present in the European High North, but should also normalise its presence in the wider Arctic to normalise and enhance alliance interest and activity in there.⁴¹

What could be underlined is that the Arctic is strategic for NATO members, especially in terms of deterrence. As Andrea Charron puts it, "The Arctic is one component of an integrated NATO deterrence posture, in conjunction with NORAD and USNORTHCOM".⁴² However, NATO is not central to the stability of the region. Strong cooperation remains the norm in the Arctic because the AC has been successful in fostering dialogue and peaceful cooperation between members, indigenous groups and observer states. The fact that hard security is outside its mandate has allowed discussions to remain possible even when crises were happening in

39 Andreas Østhagen, Gregory Levi Sharp and Paal Sigurd Hilde, "At Opposite Poles: Canada's and Norway's approaches to security in the Arctic," *The Polar Journal* 8, No. 1 (2018).

40 Haftendorn, "NATO and the Arctic: is the Atlantic alliance a cold war relic in a peaceful region now faced with non-military challenges?"

41 Duncan Depledge, "NATO and the Arctic," *The RUSI Journal* (2021).

42 Andrea Charron, "NATO and The Geopolitical Future of the Arctic," *Arctic Yearbook* (2020).

other parts of the globe. This political status quo should remain a priority and be carefully balanced against NATO's deterrence posture.

Conclusion

The alliance has some strengths which enable it to deal with future maritime challenges in the Arctic. Its hard capabilities are essential for power projection, strategic deterrence and maritime security and presence. As underlined by NATO's secretary general, the priority of the alliance should be first and foremost to remain predictable and be present while working on avoiding any further escalation. We believe that being aware of Arctic issues and maintaining a presence while not having any formal involvement is a well-balanced position for NATO to adopt. Avoiding a security dilemma and an increase in tensions should remain the priority of the organisation.

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The Rise of China and the Black Sea Region: Opportunities and Challenges for NATO

Deborah Sanders

China's rising power is one of the most significant global geostrategic developments of the 21st century and will have a profound effect on NATO members and partners in the Black Sea Region (BSR).¹ Jens Stoltenberg, the NATO Secretary General, put China firmly on NATO's radar when he recently stated that the alliance must face up to Beijing's growing military might and ambitions. Recent Chinese activities, including working more closely with Russia, increasing its investment in critical infrastructure (such as ports), and Beijing's use of COVID-19 disinformation campaigns, he has argued, all have security consequences for NATO that cannot be ignored.² Over the last year, there has been a growing recognition within NATO that the rise of China has been of such a scale and at such proximity to core NATO interests that no member or part of NATO can afford to sidestep or ignore it.

This is especially so in the BSR.³ Under the Belt and Road Initiative (BRI), China has significantly increased its engagement with and investments in the Black Sea and as a result has expanded its influence there, becoming an important player in the region.⁴ This increase in Chinese engagement in the region will inevitably affect maritime security and stability. Given that the Black Sea is home to three NATO members, Bulgaria, Romania and Turkey, and two NATO partners, Georgia and Ukraine, China's growing presence in the region will affect Allied Maritime Strategy (AMS) in the future.

The London Declaration, which emerged from the NATO summit in 2019, recognised China's growing influence and that this presented 'both

1 The BSR is taken in this article to comprise the six littoral states of the Black Sea.

2 Alexandra Brzozowski, 'China 'not an enemy' but NATO must face growing role, NATO chief says', *Euractiv*, 8 June 2020.

3 Jens Ringsmore and Sten Rynning, 'China brought NATO closer together', *War on the Rocks*, 5 February 2020.

4 Bruno Mações, *Belt and Road, A Chinese World Order*, (C. Hurst & Co, 2018).

opportunities and challenges' that the alliance needed to address.⁵ This chapter examines those opportunities and challenges and argues that the AMS will need to reflect the fact that, while China's increasing engagement will create potential maritime security challenges for NATO members and partners, it could also lead to new opportunities for stability and maritime cooperation. In making this argument, this chapter is divided into three parts. The first part explores China's growing influence in the BSR and illustrates the degree of variation in the levels of engagement with the BRI amongst Black Sea littoral states. The second section looks at how Chinese influence is likely to increase further in the BSR due to the opening of the new Istanbul Canal and the increase in global containerised shipping. The last section considers the opportunities and challenges for NATO offered and posed by China's increasing engagement in the BSR, especially in terms of the development of the AMS.

China and the BSR

Over the last few years, China has significantly increased its engagement and investments in the BSR. The key context for this is the BRI, a multi-faceted global investment programme. The BRI has both continental and maritime dimensions and is focused on increasing integration and connectivity through such activities as reducing trade barriers, increasing financial and infrastructure investments, and promoting the coordination of policy. Though its key features are financial and economic, its purpose and ramifications, of course, are also political and strategic, since the BRI is also a conduit for Chinese interests and influence. In the Black Sea, China has focused primarily on infrastructure and port development projects in order to turn the region into a transportation and logistics hub linking Asia to Europe.⁶ The level of engagement with China by BSR littoral states varies enormously: from little to no investment in Romania, which has instead favoured cooperation with Washington and Brussels over Beijing, to more active engagement and cultivation by Georgia, Ukraine and Bulgaria. More recently, Turkey has also tilted increasingly towards Beijing. Of all the Black Sea littoral states, Georgia has been the most active in securing

5 Christopher Woody, 'NATO is finally talking about China and there are 3 big problems it has to address', *Business Insider India*, 5 December 2019.

6 Revaz Topuria, 'Georgia can still be a hub for China, but only if the Belt and Road Survives', *The Diplomat*, 27 August 2019.

Chinese investment and this looks set to continue in light of its desire to mitigate some of the damaging effect of the COVID-19 pandemic on the Georgian economy.⁷ Georgia is seen by China as an important transportation and logistics hub linking Asia to Europe via the BRI.⁸ As part of its commitment to becoming a regional hub for trade, the Georgian government has developed ambitious plans to develop its maritime infrastructure along its Black Sea coastline; making Georgia's ports an integral part of China's BRI.⁹ As a result, Tbilisi is looking to expand its largest port, Poti, where China already has important interests, and to build a new deep-sea water port in Anaklia. Under an ambitious two-stage expansion plan, Poti port, which is a major seaport off the eastern Black Sea coast, will be modernised and upgraded.¹⁰ During an official visit to Georgia in May 2019, China's foreign minister announced that the two countries would also explore further avenues of bilateral cooperation.¹¹ In a significant sign of China's commitment to Georgia, the Asian Infrastructure Development Bank (AIIB) loaned Georgia just under \$100 million in May 2020 for COVID-19 relief.¹²

Despite getting off to a slower start, China's interest in Ukraine has also increased significantly over the last few years.¹³ For Ukraine, the BRI is seen as a tool with which to improve infrastructure, attract foreign investment, and as an important means of reducing its dependence on Russian markets. Sino-Ukrainian bilateral trade relations have increased dramatically, and China is now Ukraine's largest single national trading partner, pushing Russia into second place.¹⁴ For China, Ukraine's ports and infrastructure give Beijing access to agricultural products. In 2015, China's Oil

7 'IMF seeks Georgia's economy contracting by 5% in 2020', *Reuters*, 16 September 2020.

8 Revaz Topuria, 'Georgia: The Key to China's 'Belt and Road'', *The Diplomat*, 28 April 2016; Joseph Larsen, 'Georgia: The Black Sea Hub for China's 'Belt and Road'', *The Diplomat*, 3 May 2017.

9 John C. K. Daly, 'China and Georgia Deepen Transit Cooperation', *Eurasian Daily Monitor*, 15/63, 23 April 2018.

10 'APM Terminals unveils expansion project for Georgia's Poti Sea Port', *SAFETY4SEA*, 5 February 2020.

11 Emil Avdaliani, 'China set to increase its influence in Georgia', *Georgia Today*, 30 May 2019.

12 'AIIB allocates \$100 million fund to Georgia for COVID-19', *Belt and Road News*, 23 May 2020.

13 Sergiy Gerasymchuk and Yurri Potitta, 'Ukraine-China after 2014: a new chapter in the relationship', *Friedrich Ebert Stiftung*, Kyiv, 26 September 2018.

14 Natalia Datskevych, 'It's official: China is Ukraine's largest trading partner', *Kyiv Post*, 27 September 2019.

and Food Corporation (COFCO) bought Noble Agri Resources, an international agricultural corporation with assets in Ukraine, and a year later it also opened a grain terminal in the port of Mykolaiv in Ukraine. COFCO has also recently signed a Memorandum of Understanding to develop port infrastructure in Mariupol on the Sea of Azov in Ukraine.¹⁵ As part of this attempt to increase Ukraine's utility as a hub for agriculture, China's Harbor Engineering Company (CHEC) has also completed the first stage of the renovation of the Ukrainian Black Sea port of Yuzhny in Odessa and awarded a contract for the port of Chornomorsk.¹⁶

For the Chinese government, Bulgaria is also recognised as a useful logistics and transportation hub into Europe, giving Beijing direct access to the EU single market. In 2016 China agreed to develop the Bulgarian Black Sea port of Burgas as a logistics hub for trading in goods with partners in Central and Eastern Europe.¹⁷ More recently, in 2019 the China Machinery Engineering Corporation signed a USD 120 million contract with the Joint stock company Logistical Center-Varna for the joint development of port infrastructure in Varna. The project will make Varna the first modern port in Bulgaria equipped with up-to-date warehouse facilities and it will also greatly improve Sofia's cargo handling capacity.¹⁸ The Bulgarian government is also keen to improve its infrastructure, including transport and communication systems and logistic facilities, in order that Beijing is able to fully utilise Sofia's geographical advantages.¹⁹ To address these challenges and encourage Chinese investment, Bulgaria has also signed a framework deal with China to build a range of transport infrastructure, including four motorways and a tunnel under the Balkan Mountains.²⁰

Although both Turkish trade with China and Chinese investment in Turkey remain low, the Turkish government has increasingly sought closer economic ties with China, particularly in light of its strained relations with the US and Europe. Concern at the rollback of democracy in Turkey, for

15 Alexander Query, 'China to invest over \$50m in port city of Mariupol', *Kyiv Post*, 29 October 2019.

16 'Chinese company signs deal to upgrade Ukraine's Black Sea ports', *Xinhua*, 7 April 2018.

17 'China to Invest EUR 20 M in Bulgaria's Burgas Port to Facilitate Trade with Europe', *Novinite.com*, 6 May 2016.

18 'China secures Bulgaria foothold', *Port Strategy*, 18 April 2019.

19 'Interview: Belt and Road Initiative could put Bulgaria on global logistics map: expert', *Xinhua*, 27 June 2018.

20 'Bulgaria agrees four-motorway deal with government of China', *Global Construction Review*, 9 July 2018.

example, and the refusal of the US to hand over the Turkish cleric Fethullah Gulen for allegedly instigating the 2016 Turkish coup, have created a growing chasm between Washington and Ankara.²¹ Diverging policies and perspectives over Syria, Libya and energy exploration near Cyprus as well as the Turkish decision to purchase an advanced air defence system from Russia have further damaged relations.²² As a result of these difficulties, Turkey has been keen to build bridges with other actors, and Chinese direct investment in Turkey has increased significantly, with Beijing looking to double this to USD 6bn by 2021.²³ China sees Turkey as a useful means of diversifying its overland rail routes to European markets, which could make Turkey an important transit country for its goods. As a result, Turkey and China have worked together to align President Erdogan's 'Middle Corridor' infrastructure strategy with China's BRI. Turkey's Middle Corridor initiative aims to create a belt of prosperity in the eastern part of Turkey, encourage Chinese investment, allow Turkey to become a hub for Chinese–European trade and diversify Ankara's energy supplies.²⁴ The damaging effect of the pandemic on the Turkish economy is also likely to further increase Ankara's engagement with China.²⁵

China is likely to become an even more important actor in the BSR

As has been discussed in the previous section, while the level of China's investment in the Black Sea varies, Beijing has increased its economic presence in the region. This looks set to continue in the future. One important barometer of maritime economic activity is global freight demand. Pre-COVID-19 estimates suggested that global freight demand would triple by 2050, with ships expected to carry more than three quarters of all goods. Maritime freight transport would grow at an estimated rate of 3.6 per cent through to 2050 and this would lead to a near tripling of maritime trade

21 Steven A. Cook, 'Neither friend nor foe: The future of US–Turkey relations', *Council on Foreign Relations Press*, November 2018.

22 Jim Zanotti et al., 'Turkey: Background and US relations in brief', *Congressional Research Service*, 7 April 2020.

23 'China increased foreign direct investments into Turkey', *Global Policy and Analysis Think Tank*, 2019.

24 Barçın Yinanç 'Silk Road train 'first step towards a game changer'', *Hurriyet News*, 11 November 2019.

25 Laura Pitel, 'Turkey's economy suffers historic contraction in second quarter', *The Financial Times*, 31 August 2020.

volumes.²⁶ These optimistic forecasts were a key reason for China's interests in the BSR, in particular in its ports and infrastructure, as discussed above. While the COVID-19 pandemic has called into question the veracity of these predictions, there were signs of a partial recovery of maritime trade in the third quarter of 2020 and a strong indication that shipping traffic will pick up further towards the end of the year.²⁷ Recent data has also shown that global containerised freight levels are only marginally below comparative figures last year, suggesting that we are likely to see a return to pre-COVID levels in the BSR in the near future.²⁸

The continuation of China's investment in the BSR as part of the BRI will obviously be dependent on whether the Chinese economy can bounce back after the pandemic. Demand for exports from China has slowed internationally as other countries have gone into recession, and so consumption, which is the most sustainable part of Chinese growth, remains low.²⁹ China's recovery does, however, look promising. The IMF forecasts China's growth at 1.2 per cent in 2020 and above 5 per cent a year between 2021 and 2025—well ahead of any other major economy.³⁰ China has been the first major economy to return to growth since the pandemic.

Maritime traffic in the Black Sea will also be facilitated by the building by the Turkish government of the Istanbul Canal, a project due to be completed by 2025. The 45km canal, an artificial sea-level waterway, will be built connecting the Black Sea and the Mediterranean in Istanbul's Kucukcekmece-Sazlidere-Durusu corridor and is projected to have a transit capacity of 160 vessels a day; similar in volume to the Bosphorus.³¹ The new canal will also make the transit into and out of the Black Sea considerably easier and quicker. The Turkish government has banned the night passage from the Bosphorus of tankers longer than 200 metres, which has increased the waiting times for ships on either side of the strait. With traffic predicted to hit 86,000 ships by 2070, the new canal will prove invaluable in in-

26 'Global freight demand to triple by 2050', *The Maritime Executive*, 11 March 2020.

27 Jan Hoffman et al., 'Navigating through the coronavirus crisis and uncertainty: How maritime transport data can help', *UNCTAD Article 60*, 7 September 2020.

28 Linton Nightingale, 'Container Volumes edge up to recover lost ground', *Lloyds List Maritime Intelligence*, 7 September 2020.

29 Keith Bradsher, 'China's Economy Rebounds From Coronavirus, but Shares Fall', *The New York Times*, 31 August 2020.

30 Sun Yu and Yuan Yang 'Why China's economic recovery from coronavirus is widening the wealth gap', *The Financial Times*, 18 August 2020.

31 'Transportation minister unveils final 45-kilometer route of Kanal Istanbul project', *Daily Sabah*, 15 January 2018.

creasing trade flow in the BSR.³² In February 2020, the Turkish Transport and Infrastructure Minister, Cahit Turhan, confirmed that a number of countries, including China, were interested in this project.³³ A month earlier, the Turkish Presidential Communications Director, Fahrettin Altun, reinforced suspicions of Beijing's interest in the canal when he tweeted a video about the Istanbul canal project in Chinese.³⁴ The new canal could therefore attract not only further investment in vital infrastructure in the BSR by China, but could also increase access in and out of the Black Sea, reduce waiting times and so ultimately also reduce the costs of shipping in the region; something that Beijing will be keen to exploit.

Despite Chinese interests, there is uncertainty, however, as to whether the Turkish government will apply the 1936 Montreux Convention to the new canal and what this would mean for the balance of military power in the region. Under the Montreux Convention, access to the Black Sea for military ships is unrestricted for the littoral states, whereas the Convention limits the tonnage, duration and frequency of visits for all other navies. The Turkish government has yet to determine whether it will set different rules for military maritime traffic on the new canal.³⁵ If military maritime traffic using the new canal was not bound by the Montreux Convention, it could potentially alter the maritime balance of power in the BSR.

Opportunities and challenges for NATO in the BSR

Growing Chinese interest in the BSR poses a number of potential maritime security challenges for NATO that will need to be considered in a revised edition of the AMS. Perhaps the most important issue will be the extent to which China could use the deep-sea ports, tunnels, bridges, roads and critical infrastructure it has been developing to damage NATO's interests and footprint in the region.³⁶ There are legitimate concerns that

32 Frank Jacobs, 'Why Erdogan wants to turn Istanbul into an island', *Big Think*, 14 September 2020.

33 'Turkish President's Canal Project interests Chinese Investors', *Belt and Road News*, 3 December 2019.

34 'Turkish communication director's Chinese tweets on Canal Istanbul raises eyebrow', *BBC Monitoring*, 7 January 2020.

35 Mehmet Emin Birpınar, 'Maritime developments make Kanal Istanbul necessary', *Daily Sabah*, 3 September 2020.

36 Stefanie Babst, 'The time is ripe for NATO to consider a dual-track approach to China', *European Leadership Network*, 7 September 2020.

Chinese investment in ports and rail infrastructure in the Black Sea Region could potentially complicate NATO's mobility into and out of the region.³⁷ For instance, Chinese control over Bulgarian and Georgian ports in the Black Sea could decrease the willingness of NATO members to move military forces—including sensitive technology—through the ports and surrounding networks. This could affect planning, resulting in fewer military exercises in the BSR, decreasing NATO's ability to defend the region in the future.³⁸ A Chinese debt crisis in the BSR, particularly in light of the pandemic, could also have security implications for NATO as Beijing could seize assets such as ports or infrastructure in lieu of debt repayments by littoral states and could thereby also limit NATO's access and potential presence in the BSR.

A second challenge to NATO's security and that of its members and partners in the BSR is the risk that some of the smaller littoral states could get caught up in the ongoing great power competition between the US and China. While the election of a new President, Joe Biden, is likely to see the development of a steadier and more coherent China policy than under the previous administration, the competitive relationship between Washington and Beijing is likely to continue in the future given the bipartisan view within the US that China is its most serious strategic competitor.³⁹ As a result, the new US administration is as likely as the previous administration to put pressure on NATO partners Ukraine and Georgia, as well as NATO members such as Bulgaria, to limit their cooperation with China, particularly on issues relating to security and technological issues. This will put these littoral states in the difficult position of having to try to reconcile often competing economic and political interests, and perhaps of even having to make starker choices between East and West.

Lastly, an additional challenge posed by China's growing interests in the BSR is that Moscow and Beijing might engage in systematic strategic cooperation in the region, blocking, or at least complicating, NATO's active engagement. Despite widespread scepticism about the longevity of the special relationship between Russia and China, there is evidence of cooperation and coordination between the two powers.⁴⁰ Both consider Eurasia

37 Christopher Woody, 'NATO is finally talking about China, and there are 3 big problems', *Business Insider India*, 5 December 2019.

38 Lauren Speranza, 'China Is NATO's New Problem', *Atlantic Council*, 8 July 2020.

39 Dan Baer, 'America under Biden won't go soft on China', *Carnegie Endowment for International Peace*, 6 November 2020.

40 Nadege Rolland, 'A China–Russia condominium over Eurasia', *Survival*, January 2019, 7–22.

their strategic backyard, share similar concerns about political stability and security in the area, and have launched ambitious initiatives to strengthen their influence over the region. China's strategy in Eurasia, which has been to foster cooperation and persuade the Kremlin that China's Eurasian ambitions actually support Russian goals, has focused on highlighting common political, economic and security interests and, perhaps most importantly of all, on ceding Moscow a leadership role in a region that it regards as falling within its sphere of influence.⁴¹ There is concern, therefore, that this strategic cooperation, or at least deconfliction, between Russia and China in Eurasia could be extended to include the BSR. There are certainly signs of China's sensitivity to Russia's interests in the BSR. For instance, Beijing has been unhelpful on key diplomatic issues critical to Georgian security despite its close relationship with Tbilisi; and China has been silent on Russia's illegal annexation of the Crimea and its support for separatists in the east of Ukraine despite investing heavily in ports and infrastructure in the Sea of Azov, and despite China's general opposition to attempts to challenge principles of state sovereignty.⁴² If China further seeks to extend its influence in the Black Sea, then there is a possibility that it will seek to extend its cooperation with Russia into the area.

However, this future isn't necessarily certain. The expansion of the BRI into the BSR could equally present opportunities for NATO to work more closely with China. As China pushes increasingly into the BSR, Beijing could well be looking for a stable geostrategic environment. Beijing will therefore be keen to promote the status quo and want to avoid creating a challenging maritime environment as this could damage its investments. China's growing influence could therefore act to curtail, or at least restrain, Russia's more destabilising policies and actions in the BSR because these might create a challenging and problematic operating environment for China's Maritime Silk Road. In practical terms, this is likely to mean that China's investments in Mariupol in the Sea of Azov could have a calming effect on tensions between Ukraine and Russia. Russia will want to avoid antagonising a key ally—China—by provoking further maritime conflict and, more importantly, delaying the transit of Chinese cargo through the Kerch Straits. Similarly, China's presence in Georgia could act as a dampener in terms of future clashes between Russia and Georgia over South Ossetia and Abkhazia. While China's engagement in the BSR under

41 *ibid.* 8.

42 Emil Avdalani, 'A Chill in Georgia–China Relations', *Modern Diplomacy*, 3 October 2020.

the BRI will not radically change Russia's policy towards Georgia or Ukraine, it could serve to limit Russia's freedom of manoeuvre and create a calmer and less challenging maritime environment.

In addition, given China's interests in ensuring the safe transit of its maritime traffic in the BSR, some of the smaller littoral states with good relations with Beijing might look at encouraging China's engagement in maritime security operations in the region. China has demonstrated a commitment to using its naval forces to address international maritime security issues. Since 2008, the Chinese navy has participated in United Nations mandated anti-piracy patrols in and around the Gulf of Aden and Somalia. Indicating the strategic value of protecting Beijing's commercial maritime interests, Chinese policy guidelines also clearly point towards a potential role for the Chinese navy in protecting aspects of the Maritime Silk Road.⁴³ Given the expansion of the BRI into the Black Sea, Beijing has a vested interest in working with NATO members and partners in the region to address common maritime security challenges such as piracy, pollution and terrorism. Chinese naval engagement in the Black Sea has been very limited so far. In 2012, the Chinese navy engaged in a number of goodwill visits to Sevastopol, Istanbul, Varna and Constanta after finishing its deployment in the Gulf of Aden on anti-piracy operations.⁴⁴ Since then, two Chinese warships have taken part in Victory Day celebrations in Novorossiysk in the Black Sea in 2015. Although this was clearly a sign of the strength and depth of its security relationship with Moscow, it does indicate that China recognises that the Black Sea matters. Although the BSR is clearly not a top priority for the Chinese navy, encouraging goodwill visits, as well its engagement in regional maritime security operations, is clearly also in NATO's interests. While Chinese naval engagement in the Black Sea could pose security issues for NATO, the potential benefits of encouraging Chinese engagement in regional maritime security operations could outweigh the challenges.

43 Veerle Nouwens, 'Who Guards the 'Maritime Silk Road'', *War on the Rocks*, 24 June 2020.

44 Joshua Kucera, 'Chinese warships in Black Sea for Russian Victory Day celebrations', *Eurasianews*, 7 May 2015.

Conclusion

China has become an important actor in the Black Sea, and developments in the region mean that its influence is likely to continue to grow in the future. The challenges this poses for NATO members and partners currently outweigh the opportunities. These challenges include the security implications of China's potential ability to deny NATO members access to vital infrastructure, including ports in the region, the return of great power competition to the Black Sea and the extension of Sino-Russian strategic cooperation into the region. The opportunities of the rise of China in the BS for NATO are more limited. These include the potentially stabilising effects of Chinese economic interests on the region, in particular on encouraging Russian restraint, and the potential for Beijing's participation in maritime security operations. These challenges and potential opportunities will therefore need to be reflected in NATO's AMS.

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China's PLAN and Alliance Maritime Strategy

Sidharth Kaushal

Over the last three decades, China's People's Liberation Army Navy has evolved from a force geared towards coastal defence into a navy capable of high-intensity warfighting within its own region and, increasingly, extra regional power projection. This maritime transformation, which began under the stewardship of Admiral Liu Huaqing, has roots in an assessment of China's geopolitical priorities that has persisted across the administrations of Jiang Zemin, Hu Jintao and Xi Jinping.¹ It is not, as is sometimes assumed, a consequence of the PRC's current leadership's preferences, but is the result of both structural imperatives and deeply embedded perceptions of China's security environment, which will likely remain stable irrespective of who runs China.

As the Cold War ended, China's geopolitical environment was transformed. On one hand, the dissolution of the Soviet Union placed the PRC in the safest geopolitical position that it had enjoyed since its emergence in 1949. For the first time in its modern history, China faced no realistic prospect of invasion by a continental power. Simultaneously, however, the dissolution of the Soviet Union obviated the need for the tacit Sino-American entente that had emerged after Nixon's rapprochement with China. Issues such as the status of Taiwan and China's outstanding territorial disputes on its maritime periphery found new salience as Chinese policymakers adjusted to what they assumed would be an emerging multipolar world in which China's rise would cause friction between the PRC and established powers such as Japan and the United States. Contemporary authors such as Shen Qurong, the then president of the China Institute of Contemporary International Relations, and Colonel Cu Weidi of China's National Defence University held the view that the 21st century would be characterised by several key features:²

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- 1 For a discussion of the history of China's maritime turn, see James Holmes and Toshi Yoshihara. *Red Star Over the Pacific: China's Rise and the Challenge to U.S Maritime Strategy*. (Annapolis: Naval institute Press, 2018).
 - 2 Michael Pilsbury, *China Debates the Future Security Environment*, (Washington D.C: National Defence University Press, 2000). <https://fas.org/nuke/guide/china/doctrine/pills2/part09.htm>.

- A multipolar order in which established alliances yielded to a shifting kaleidoscope of transactional short-term alignments
- Friction between the PRC and established powers, primarily on its maritime periphery
- The replacement of the threat of global wars with that of short sharp “local wars” both on China’s periphery and beyond—the key drivers of which being territorial control and access to critical resources

The PRC’s military and political elites were painfully aware of their nation’s weaknesses in this period. The 1996 Taiwan Straits Crisis illustrated the US’ ability to deploy naval and air power in China’s maritime periphery with impunity. Moreover, China’s geography is inherently unfavourable to a state’s sea power ambitions. China is hemmed in by the First Island Chain, running from the Ryukus through Taiwan to the littoral states of the South China Sea. China’s extended coastline requires it to maintain multiple geographically disjointed fleets which would need to traverse a gauntlet of potentially contested waters near Japan and Taiwan in order to combine forces in a wartime scenario.³

The Chinese response to this security environment has been two-pronged. First, China has sought to gradually alter its strategic geography by establishing maritime preponderance in the area running from Taiwan through the South China Sea. As Chinese naval strategists conclude, possession of both Taiwan and Hainan Island, along with preponderance in the South China Sea would allow the PLAN to operate from a central position on interior lines to concentrate its forces in both the Central Pacific and Indian Oceans more rapidly than a US navy operating on exterior lines.⁴ In light of China’s present disadvantages in the East Asian maritime domain, the PRC has sought to achieve this transformation, where possible, through steps short of warfare and the development of a fleet intended to operate not independently but as part of a “Joint Firepower System”, comprising of an array of long-range precision strike assets distributed across the land, sea and air in order to prosecute a short high-intensity

3 On Chinese views of the maritime geography of the PRC, see Sidharth Kaushal and Magdalena Markiewicz, *Crossing the River by Feeling the Stones: The Trajectory of China’s Maritime Transformation*, (London: RUSI Occasional Paper, 2019), 10–20.

4 Yanlin Bai, ‘Daolian shang de shijie haijun’ [‘The World Navies on the Island Chains’], *Xiandai de haijun [Modern Navy]*, vol. 10 (2008), 10–20. Quote is author’s translation.

fight within the First Island Chain should such a conflict be deemed necessary.⁵

The second component of the PLAN's maritime strategy has been the gradual development of the nucleus of a blue water navy. Currently, the PLAN has limited influence outside the First Island Chain. A more ambitious vision is portended by the expansion of the PLAN's historic mission set in recent editions of authoritative publications such as the *Science of Military Strategy* as well as China's 2019 defence White Paper. This mission set now includes the concepts of "forward edge defence" along an "arc of interest" spanning parts of the Indian Ocean and the Western Pacific beyond the First Island Chain as well as "far seas protection" of the SLOCs, which straddle key Chinese economic interests.⁶ Effectively, defence within the First Island Chain and influence beyond it have a symbiotic relationship within Chinese maritime strategy. Dominance of key areas within the First Island Chain would free the PLAN from its maritime shackles into a more prominent global role. Equally, an initially limited presence beyond the First Island Chain could contribute to localising conflicts on China's periphery by deterring or slowing external intervention (forward edge defence) as well as utilising extra regional deployments further afield to form the political and logistical basis for extra regional deployment (far seas protection). In coming decades, a growing and visible PLAN presence in the Indian Ocean, the Persian Gulf and the Arctic is to be expected.

This twin pronged strategy raises a number of questions for alliance policymakers. This chapter will seek to lay out the contours of the PRC's maritime strategy, its likely impact on alliance interests and the options available to policymakers as they craft a future AMS. The author's core contention is that while the PLAN does not represent a present threat to the alliance, there exists a strong basis for a combination of engagement and strategic hedging to ensure that this remains the case.

5 Peng Guangqian and Yao Youzhi, *The Science of Military Strategy*, 2nd edition (Beijing: Military Science Press, 2000), 493–95.

6 Shou Xiaosong, *Zhanlue Xue [The Science of Military Strategy]*, (Beijing: PLA Press, 2013), 10; The State Council Information Office of the People's Republic of China, 'China's Military Strategy, May 2015. http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm, accessed 29 January 2021. The 2019 defence White Paper reiterates this forward policy of combining near seas and far seas protection; see The State Council Information Office of the People's Republic of China, *China's National Defence in the New Era* (Beijing: Foreign Languages Press, 2019).

The Evolution of the PLAN and its Role in Chinese Grand Strategy

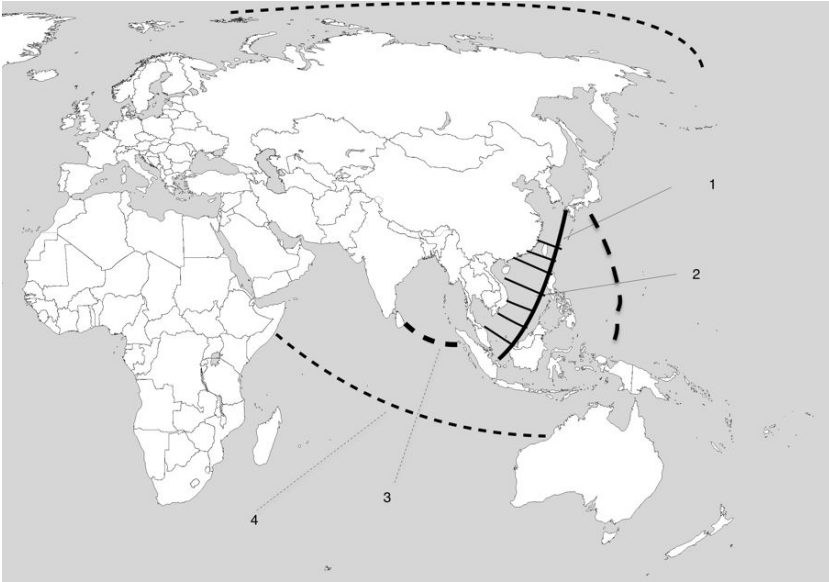
When Chinese policymakers view the world, they see a series of concentric circles emanating from Beijing. The first encompasses the Chinese mainland, while the second spans China's maritime periphery within the First Island Chain.⁷ Beyond this is what the 2013 edition of the doctrinal publication *The Science of Military Strategy* referred to as the forward edge of China's perimeter—the eastern Indian Ocean and the Central Pacific. Beyond this are China's far seas interests, straddling key economic projects such as China's maritime Silk Road. From each circle to the next, China's interests become more limited, as do the range of tools at its leaders' disposal. However, there is a symbiotic relationship between the circles. Maritime preponderance close to home facilitates an expanded presence further afield which, combined with other levers of national power, serves China's regional interests. Consider how China's commercial influence has allowed it to progressively isolate Taiwan.⁸ Equally, as figures from Admiral Liu onwards have noted, should this isolation allow for the forceful reunification of China and Taiwan, it will allow the PLAN to operate with greater freedom on the world stage.⁹ In effect, there is a positive feedback loop between developing a preponderant position on China's periphery and cultivating influence and a competitive presence further afield.

7 See Andrew J. Nathan and Andrew Scobell, *China's Search for Security* (New York, NY: Columbia University Press, 2012).

8 Timothy Steven Rich and Vasabjit Banerjee, 'Running Out of Time? The Evolution of Taiwan's Relations in Africa', *Journal of Current Chinese Affairs*, vol. 44, No. 1 (2015), 141–61.

9 Kaushal and Markiewicz, *Crossing the River By Feeling the Stones*, 20–30.

Figure 1: A visualisation of Chinese strategists' security framework.



Legend: 1-The First Island Chain; 2- The Taiwan–South China Sea hinge area “China’s Caribbean”; 3-The forward edge of China’s defence perimeter; 4-The areas in which “Far Seas Protection” missions are to be conducted.¹⁰

Within the First Island Chain, China’s overarching focus has been on gradually revising the strategic status quo in the subregion stretching from Taiwan through the South China Sea. The Chinese have noted the geographical similarities between this maritime complex and the Caribbean. Much as dominance of the Caribbean coupled with the construction of the Panama Canal allowed the United States to transform itself into a two-ocean navy capable of concentrating power in either the Atlantic or the Pacific more quickly than its European rivals, Chinese strategists posit that dominance of this key region and its multiple routes of egress, such as Sunda, Lombok and Malacca, could allow the PLAN to operate on interior lines between the Pacific and Indian Oceans.¹¹ Indeed, it has been pro-

10 Note, that the boundaries of each ring are not set in stone. Thus, for example, far seas protection areas could become part of the forward edge if circumstances allow the PLAN to operate more freely.

11 James R. Holmes and Toshi Yoshihara, ‘China’s “Caribbean” in the South China Sea’, *SAIS Review*, vol. 24, No. 1, (2006): 79–92.

posed that should China achieve its near seas aims, an independent maritime command operating from either Hainan Island or Taiwan could be established to serve as the command structure for a combined fleet.¹² At present, each of China's three fleets operates under a Joint Theatre Commander with responsibility for the coordination of cross-service assets in a regional conflict. The absence of a dedicated command structure for expeditionary operations illustrates that warfighting at reach is still seen as a distant prospect despite the PLAN's steps towards a forward posture.

China's Sea Control Force

The bulk of PLAN construction over the last three decades has focused on large numbers of smaller vessels such as the Type 056 corvette and the Type 022 Catamaran. These vessels are equipped with the YJ-83 anti-ship cruise missile to play a variety of roles. Built in large enough numbers to maintain a persistent presence alongside the Chinese coastguard and People's Armed Forces Maritime Militia,¹³ their anti-surface warfare (ASuW) capabilities render them capable of prevailing against the naval forces of weaker powers in small-scale kinetic clashes. In wartime, these assets would act as aquatic transporter erector launchers (TELs), sheltering under the air defences of larger vessels such as the Type 052D and Type 055 to compensate for their own lack of air defences and acting as part of a cross-domain system of precision strike launchers in tandem with ground and air-based strike assets.¹⁴ Older frigates and destroyers deemed no longer fit for high-intensity warfighting are also part of this force—either through retirement to civilian agencies or reassignment to these tasks within the PLAN.¹⁵

12 Zhou Xiaosong, *Zhanlue Xue [The Science of Military Strategy]*, (Beijing: PLA Press, 2013), 108.

13 China has commissioned over 60 Type 056 Corvettes and has constructed 80 Type 022 Catamarans. Ronald O'Rourke, *China's Naval Modernization: Background and Issues for Congress*, (Washington D.C: Congressional Research Service, 2020), 11; Franz Stefan Gady, 'China's Navy Commissions 41st Type 056/056A Stealth Warship', *The Diplomat*, 13 June 2018. <https://thediplomat.com/2018/06/chinas-navy-commissions-41st-type-056056a-stealth-warship/>, accessed 29/01/2021.

14 Nan Li, 'Why is the Surface Fleet Gaining Importance? Insights from PLA Doctrinal Writings', in Peter Dutton and Ryan Martinson (eds.), *China's Evolving Surface Fleet*, (Newport: U.S Naval War College, 2017) 43.

15 For example, old Jiangwei-I class frigates were turned into coastguard cutters—notably without the complete removal of all of their armaments. Franz Stefan

The purpose of this hybrid sea control force is to contribute to a gradual Finlandisation of the states on the southern portion of China's maritime periphery. The 2012 Scarborough Shoals stand-off and the Vanguard Bank stand-off between the Chinese survey vessel Haiyang Dizhi 8 and its coast-guard escorts and their Vietnamese counterparts illustrate the role of the PLAN in grey-zone competition.¹⁶ In each case, the PLAN remained over the horizon, leaving the task of direct contestation to civilian and coast-guard assets. However, the deployment of PLAN vessels off the Scarborough Shoals, as well as its persistent and visible presence within areas claimed by Vietnam, limited rival disputants' response options against Chinese coastguard assets. The risk of localised escalation by persistently engaged PLAN assets left claimants with unsavoury choices between a limited kinetic clash from a position of local weakness, further escalation by building up naval forces in the area or concession.

Operationally supported by military facilities on China's artificial islands within the South China Sea, the PLA's large force of surface combatants can set the terms of engagement for littoral states. Nations which adapt their policies to a more emollient stance vis-à-vis China can expect certain concessions—such as when, following a series of statements supportive of China by President Rodrigo Duterte, Philippine fishing vessels were allowed more latitude to fish near the Scarborough Shoals.¹⁷ By contrast, a more coercive approach was taken towards Vietnam, which has pursued the internationalisation of its territorial disputes with China and supported a wide-reaching code of conduct within the South China Sea, whilst attempting to externally balance Chinese power through partner en-

Gady, 'How China Is Expanding Its Coast Guard. Beijing is converting old frigates into coastguard patrol vessels', *The Diplomat*, 30 July, 2015. <https://thediplomat.com/2015/07/how-china-is-expanding-its-coast-guard/>, accessed 05/01/2021; In other cases, older vessels have been retained by the PLAN but effectively reassigned to hybrid missions rather than preparation for warfighting. See Kaushal and Markiewicz, *Crossing the River by Feeling the Stones*, 55.

- 16 Bonnie S. Glaser and Matthew P. Funaiolo, 'The South China Sea: Assessing Chinese Paranaul Behavior Within the Nine-Dash Line', in Andrew Erickson and Ryan Martinson, *China's Maritime Gray Zone Operations*, (Annapolis MD: Naval Institute Press), 189–190; For a brief description of the Vanguard Bank stand-off, see Ankit Panda, "US Slams China's 'Bullying' Amid Vanguard Bank Oil Exploration Standoff With Vietnam", *The Diplomat*, 22 July, 2019. <https://thediplomat.com/2019/07/us-slams-chinas-bullying-amid-vanguard-bank-oil-exploration-standoff-with-vietnam/>, accessed 03/01/2021.
- 17 Peter Dutton, 'Conceptualising China's Maritime Grey Zone Operations', in Andrew Erickson and Ryan Martinson (eds.), *China's Maritime Gray Zone Operations* (Annapolis, MD: Naval Institute Press, 2019), 30–38.

gements with India and Japan.¹⁸ All of this challenges China's preferred model of direct bilateral engagement, in which the PRC holds distinct advantages.¹⁹ This corresponds to a wider pattern of behaviour in which China has utilised territorial disputes for coercive issue linkage, whereby persistent pressure is used not only to assert control over specific objectives but to shape the wider grammar of engagement between China and neighbouring states.²⁰

The PLAN's Evolving Blue Water Posture

The sea control force discussed above is joined by the nucleus of a blue water fleet which, in addition to playing a role in regional competition, serves as the second prong of Chinese maritime strategy—developing a competitive, if not quite preponderant, position beyond the First Island Chain that is consistent with forward edge defence. Exercises by PLAN surface action groups in the Indian Ocean likely serve as preparation for this task.²¹ Similarly, in 2014, the PLAN docked a submarine in Sri Lanka, ostensibly to support anti-piracy missions in the Gulf of Aden. The implausibility of this pretext lends itself to a counter-interpretation of China trying to habituate regional powers such as India to the presence of Chinese naval assets in the Indian Ocean.²²

The direct military component of forward edge defence is augmented by the economic and security engagement of countries in the Indian

18 Lye Liang Fook and Ha Hoang Hop, *Vietnam's Response to China's Maritime Assertiveness in the South China Sea* (Singapore: ISEAS, 2018); Walter Sim, 'On Yoshihide Suga's overseas debut, Japan, Vietnam agree broadly on defence transfer', *The Straits Times*, October 2020. <https://www.straitstimes.com/asia/east-asia/japan-vietnam-reach-broad-agreement-on-transfer-of-defence-gear>, accessed 05/01/2021; Hyunh Tam Sang, *Time to Forge New Vietnam India Defence Ties*, CSIS Asia Maritime Transparency Initiative, 21 August 2020. <https://amti.csis.org/time-to-forge-india-vietnam-defense-ties/>, accessed 05/01/2021.

19 On China's attempts to socialise ASEAN states into a broader model of bilateral engagement that extends beyond territorial disputes, see David Guo Xiong Han, 'China's Normative Power in Managing South China Sea Disputes', *Chinese Journal of International Politics*, vol. 10, issue 3 (Autumn 2017), 269–297.

20 Krista E. Weigand, 'China's Strategy in the Senkaku/Diaoyu Islands Dispute: Issue Linkage and Coercive Diplomacy', *Asian Security*, vol. 5, No. 2 (2009), 170–93.

21 Joshua T. White, *China's Indian Ocean Ambitions: Investment, Influence and Military Advantage*, (Washington D.C.: Brookings Institution, 2018).

22 *ibid.*

Ocean. China's construction of dual-use facilities in ports such as Hambantota and Gwadar allows the PLAN to extend its logistical reach without the construction of high-visibility bases.²³ Foreign military sales represent another avenue by which China can achieve strategic effects on its forward edge without the direct deployment of forces. The sale of Yuan Class diesel electric submarines (SSKs) equipped with air-independent propulsion to Pakistan along with the Type 054A Frigate equipped with the supersonic YJ-18 ASCM will, for example, curtail the Indian Navy's freedom of action in the Western Indian Ocean and tie up resources that might otherwise serve India's "Act East" policy of security engagement in the Asia-Pacific.²⁴

Finally, beyond the twin concentric rings of China's near seas and its strategic forward edge, the PLAN envisions engaging in what it calls protection as opposed to defence. This includes anti-piracy missions, naval diplomacy and combined civil-military efforts to develop domain awareness in key regions. The purposes of these missions can be wide-ranging. They serve at once to protect China's expanding commercial interests and its citizens abroad, to habituate states to the presence of the PLAN beyond its region and to generate the maritime domain awareness which could support a more substantial PLAN presence beyond its forward edge should circumstances dictate.²⁵ The most prominent of these missions has been the PLAN's involvement in anti-piracy missions off the Gulf of Aden. Less visibly, however, the PLAN has also been involved in supporting Chinese scientific research in both the Arctic and the Antarctic. Through the rotation of personnel with the State Oceanic Administration and the involvement of the PLAN in providing logistical support and protection to research vessels, the PLAN has begun to build a presence in these regions.²⁶ As the 2015 transit of five PLAN vessels through the Bering Strait demonstrates, this presence will likely become more explicit. Retired Rear

23 Abhijit Singh, *China's strategic ambitions seen in the Hambantota port in Sri Lanka*, Observer Research Foundation, July 2017. <https://www.orfonline.org/research/chinas-strategic-ambitions-seen-in-the-hambantota-port-in-sri-lanka/>, accessed 05/01/2021.

24 Franz Stefan Gady, 'China to Supply Pakistan With 8 New Stealth Attack Submarines', *The Diplomat*, August 2016. <https://thediplomat.com/2016/08/china-to-supply-pakistan-with-8-new-stealth-attack-submarines-by-2028/>, accessed 03/01/2021.

25 See, for example, Ryan Martinson, 'China as an Atlantic Naval Power', *RUSI Journal*, vol. 164, issue 9 (2019), 18–31.

26 Anne Marie Brady, *China as a Polar Great Power*, (New York: Cambridge University Press, 2017), 70–80.

Admiral Yin Zhuo notes the need for a visible presence to embed China in the governmental structures managing the Arctic and the Antarctic.²⁷ Some figures have also cited the potential for the Arctic to serve as a relatively safe patrolling area for Chinese Ballistic Missile Submarines.²⁸ Much of China's presence beyond the forward edge of its security perimeter can be dubbed "competitive cooperation". The provision of public goods such as safe sea lines of communication undoubtedly benefits the PRC, but it also serves another purpose: developing both the pretext for a potentially more substantial presence along China's SLOCs and the logistical and informational sinews to support it.

Over the last several decades, the PLAN has carried out a build-up of larger multi-mission platforms, which has been characterised by periods of cautious experimentation, followed by rapid serial constructions once a platform was selected. The period between 1990 and 2018 saw China build six different types of DDG, combining both Chinese and imported technology. Once the Luyang III (type 052D), which featured the Chinese HHQ-9 SAM system as well as the Type 346B AESA radar, was selected as a viable model comprised mainly of domestic components, China embarked on rapid serial production of this vessel—constructing 14 052Ds in six years after 2012.²⁹ China's construction of frigates has followed a similar pattern, with four models commissioned over the last three decades before it selected Type 054A for serial production. The vessel, which is equipped with the YJ-18 ASCM and both hull-mounted and variable depth sonar as well as the HHQ-16 medium-range SAM system, reflects lessons learned over the last several decades, during which China built 43 frigates of various classes.³⁰ Recently, there appears to have been a shift towards even larger platforms such as the Type 055, which is comparable to the Ticonderoga cruiser in terms of its size and capacity for AAW and ASuW and is equipped with a domestically built QC-280 gas turbine engine, as well as a new aircraft carrier class which, unlike China's first aircraft carrier the Liaoning and its sister the Shandong, will be equipped with EMALS.³¹ The Type 055 cruiser and Type 003 carrier along with assets such as the

27 *ibid.*

28 *ibid.*

29 Kaushal and Markiewicz, *Crossing the River By Feeling the Stones*, 52–54.

30 *ibid.*

31 Sidharth Kaushal, 'The Type 055: A Glimpse into The PLAN's Future Developmental Trajectory', *RUSI Defence Systems*, October 2020. <https://rusi.org/publication/rusi-defence-systems/type-055-glimpse-plan's-developmental-trajectory>, accessed 06/01/2021; Sam LaGrone "U.S. Admiral Talks 3rd Chinese Aircraft Carrier: 'Go

planned Type 095 SSN and the Type 076 LHD will likely serve as the nucleus of a far seas navy.

However, China's development of a far seas fleet has proceeded with caution. Currently, China fields fewer vessels of a DDG size or greater than Japan. This partially reflects the technical challenges of building complex multi-mission vessels, but also a careful analysis of China's maritime geography. The sinews of a far seas force both in technical and geopolitical terms are being built cautiously while China seeks to alter the maritime geography of the First Island Chain through a policy of calibrated revisionism.

Adapting Alliance Maritime Strategy to the Emergence of a Global PLAN

The Impact of a Rising PLAN on the Alliance's Strategic Priorities

At present, there is no NATO-wide consensus on the PRC representing an imminent threat to an alliance which is built around European security. Differences among allies on issues such as the degree to which China's rise should be viewed as an economic opportunity as opposed to a geopolitical challenge are likely to persist—with NATO's London declaration embracing both viewpoints.³² Indeed, present assessments that the PLAN remains a relatively tangential actor with regards to NATO's AMS are valid. The PLAN is yet to effectively transform its immediate periphery and its track towards a far seas presence is still tentative and limited. The alliance's strategy could engage a rising PLAN reciprocally, whilst hedging against the potentially significant challenges it may well pose in the future.

A framework for a future AMS to contend with China's rise might take as its starting point the concept of concentric circles emanating from the alliance's core which is analogous to the one which Chinese strategists use. The North Atlantic and the Mediterranean—the alliance's core area of re-

Ahead and Build that Big Ship', *US Naval Institute*, September 2020. <https://news.usni.org/2020/09/17/u-s-admiral-talks-3rd-chinese-aircraft-carrier-go-ahead-and-build-that-big-ship>, accessed 06/01/2021.

32 Mark Webber, 'The Perils of a NATO Rebalance to the Asia-Pacific', in Alexander Moens and Brooke Windsor (eds.), *NATO and the Asia Pacific*, (Rome: NATO Defence College, 2016), 83–100; London Declaration Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in London 3–4 December 2019, NATO. https://www.nato.int/cps/en/natohq/official_texts_171584.htm, accessed 06/01/2021.

sponsibility—still see a very limited PLAN presence. On the maritime “forward edge” of the alliance—the Indian Ocean and the Arctic, which directly abut the alliance’s AOR and will increasingly influence its security—there is a growing overlap between NATO and Chinese interests as both the alliance and the PLAN seek to establish a security presence along key SLOCs. Finally, within its own region, the PLAN retains a preponderance of both interest and capability vis-à-vis the alliance—short of a radical re-ordering of European priorities.

Strategic Hedging—An Overarching Concept For Managing a Rising PLAN

This chapter proposes that the alliance can manage its challenges through strategic hedging on the premise that there are a number of avenues open to the alliance to constrain the PLAN obliquely without direct confrontation.

For example, the alliance could indirectly shape dynamics within the First Island Chain to convince China to reallocate assets to its own region and thus moderate the pace at which the PLAN can evolve into an extra-regional actor. As scholars have pointed out, the First Island Chain is a defence-dominated environment, and many of the anti-access area denial (A2AD) capabilities that China has developed to offset American naval strengths can be utilised by China’s smaller neighbours to constrain the PLAN.³³

There is little reason that weaker neighbours cannot emulate the first tier of the PLAN using a hybrid fleet of well-armed light vessels backed by SSKs, a variety of ground, sea and air-launched anti-ship missiles with the more effective use of civilian and paramilitary assets to counter grey-zone activity. Indeed, nations such as Vietnam are already investing in precisely such a range of capabilities. Effectively coordinated and provided with Intelligence Surveillance and Reconnaissance (ISR) and maritime domain awareness, such assets could significantly constrain the PLAN’s freedom of action. They may not preclude every individual instance of revisionism, but would deny China the maritime preponderance it needs to alter its

33 For a fuller discussion of the options available to smaller states, see Michael Beckley, “Balancing China, How to Check Chinese Military Expansion in East Asia”, Belfer Center for Science and International Affairs, Harvard University, *Policy Watch*, November 2017. <https://www.belfercenter.org/publication/balancing-china-how-check-chinese-military-expansion-east-asia>, accessed 06/01/2021.

near seas geography.³⁴ What weaker states currently lack is not sea denial assets per se, but the ISR capabilities and maritime domain awareness to use them effectively.

Members of the alliance can help regional powers to develop the situational awareness that they need both individually and as a collective. In collective terms, the alliance could utilise many of the organisational skills learned by key members such as the UK and France through experiences such as the construction of the Maritime Domain Awareness for Trade (MDAT-GoG) system in the Gulf of Guinea to abet the creation of a regional system for shared maritime domain awareness in the South China Sea. Many well-honed skills that help partners deal with non-traditional security threats also assist regional powers in contending with maritime hybrid warfare. The alliance could also contribute to the creation of under-water domain awareness, given its long experience in this domain. This would go some way towards allowing littoral states to problematise the sea control exerted by China's hybrid presence fleet. Individual regional partners can also be engaged through advise and assist missions to generate the surveillance and reconnaissance capabilities needed to create their own anti-access bubbles. Finally, individual NATO members with experience of littoral warfare in regions like the Baltics could commit to deeper engagement on a bilateral basis with the states of the First Island Chain to complement a wider alliance approach.

Defence engagement which re-enforces an already defence-dominated operational environment by providing partners with the informational capacity to constrain the PLAN more effectively or deny it sea space in wartime need not result in direct confrontation with the PRC. Indeed, even Chinese partners such as Russia have contributed to the development of a Vietnamese A2AD system through the sale of Kilo class submarines. Moreover, such engagement could be couched in terms of helping partners to develop maritime domain awareness as opposed to more confrontational terms.

The first readjustment to AMS that this chapter proposes is the adoption of a model of defence engagement which is consistent with great power competition, if not quite confrontation.

In the Arctic and the Indian Ocean, which directly straddle SLOCs critical to both NATO and the PRC, the alliance must balance the twin aims of maintaining a competitive advantage vis-à-vis the PLAN and accommodating its pursuit of legitimate interests. Existing alliance missions such as

34 *ibid.*

counter-piracy in the Gulf of Aden should be nested within a wider competitive approach aimed at fostering interoperability with regional navies and cultivating domain awareness, all of which are critical to maritime competition. Combating non-traditional threats ought to be a subcomponent of a wider effort to engage regional powers in areas such as the Indian Ocean through initiatives to share data, conduct joint exercises and develop the interoperability to adjust to a rising PLAN, if needed. Individual alliance members such as France already have agreements on data sharing with key regional states such as India, which could, at least in principle, be adapted to be integrated into a wider framework that encompasses relations between India and the alliance as a whole.

Maintaining the centrality of NATO and its regional partners to secure key SLOCs against non-traditional threats and holding out the option of PLAN participation on the alliance's terms could allow it to set the rules of the road in areas of mutual interest or to compel the PLAN to acknowledge the competitive function of its far seas presence more explicitly. Similarly, an alliance maritime strategy that more fully incorporated the Arctic into alliance planning and included concerns such as Arctic governance and SLOC protection along with more traditional issues such as manning the GIUK gap would both engage and constrain the PLAN in the High North.³⁵

The Role of Framework Nations in Supporting Strategic Hedging

Finally, individual allies acting as framework nations could create a structure distinct from but supportive of the alliance to enable allies within NATO to opt into adopting a wider Indo-Pacific role. The Anglo-French Combined Joint Expeditionary Force could realistically serve this role in its envisioned capacity as a high-readiness pool of forces primarily geared to amphibious insertion at reach.³⁶ To be militarily credible, such a force would need to alter its command structure to integrate partners from both within and outside the alliance more flexibly and incorporate assets such as both nations' emergent carrier-strike capabilities. This was always envisioned as a desired end state for the evolution of the CJEF.³⁷ A rapid reac-

35 On the need for maritime strategy to expand beyond Naval Planning, see Frank Hoffman's chapter in this volume.

36 See Alice Pannier, 'The Anglo-French defence partnership after the "Brexit" vote: new incentives and new dilemmas', *Global Affairs*, vol. 2, No. 5 (2016), 481–490.

37 *ibid.*

tion force capable of integrating a wider range of assets than originally envisioned into operations at reach in support of alliance objectives could serve as the second component of a hedging strategy—with the latent potential for “soft balancing” to become hard balancing if certain preconditions are not met. This force could be credible in mid to high-intensity scenarios in areas identified as the forward edge of the PLAN's perimeter, such as the Indian Ocean.

A future AMS should aim for symmetry with the PLAN's own gradual evolution. Tentative steps towards indirectly constraining the PLAN can both slow its evolution into a globally deployed force, socialise the PRC into shared rules of the road and create a vital political, organisational and military substructure to constrain a potential threat to the alliance. This would require an AMS built around the concepts of hedging and soft balancing, coupled with complementary initiatives by framework nations willing to play a coalescing function for members of the alliance that are willing to play a wider role on the shared maritime flanks of China and the alliance.

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Allied Maritime Strategy from an Australian Perspective

James Goldrick

Australia has key interests in the effective construction and execution of allied strategy and allied maritime strategy. As they face a seemingly ever more complex security environment, both Australia and NATO must find ways of strengthening not only their capabilities for high intensity warfare but their responses to challenges at sea from a range of actors across the spectrum of conflict. Achieving this and providing effective mutual support for many shared threats will require even greater cooperation than in the past, but also some very clear thinking about key priorities and how we allocate our limited resources.

Australia and Maritime Strategy

To judge the Australian perspective on allied maritime strategy, it is critical to understand not only recent events but Australia's history since European settlement. Modern Australia is a child of the global maritime system. Its fortunes have risen and fallen alongside the fortunes of that system. Australia is at the end of the line and its livelihood depends upon the inherent efficiency of transport by sea. Long a source of primary products and natural resources and dependent on the import of manufactured goods and key materials, its remoteness has made Australia particularly sensitive to any threat to global trade and the stability of the global system. Even after the shift in recent decades from European markets to Asian ones, Australia remains the fifth largest consumer of shipping miles.

Thus, any reduction—or the prospect of such reduction—in the carrying capacity available to Australia has significant implications. It is no coincidence that each of the two world wars saw the country start—or restart—shipbuilding, purchase what merchant ships it could get and establish—or re-establish—a national shipping line. Australia has also always struggled to provide for its own security. Its small population and great size mean that while Australia not only cannot guarantee the safe passage of its trade products to their ultimate destinations itself, it has also always been

challenged just to defend its vast territories. Australia has thus long sought alignment with a great power and the surety of alliance.

That policy has had its successes and failures since the later years of the nineteenth century, when the relative decline of British global power, accompanied by the increasing militarisation of the Asia-Pacific, brought local realisation of Australia's vulnerability. It also brought a growing tension between the needs of local self-defence and support for the survival of the Empire as a whole. It became increasingly clear that what appeared vital to the Pacific periphery did not necessarily align with the judgement of the centre of the Empire. National defence was a primary impetus for Australia's federation in 1901 and a capable navy one of the first great federal projects. But the experience of the 1930s and the fall of Singapore in 1942 confirmed that Australia could become isolated and vulnerable to a regional great power if its major ally were occupied elsewhere.

The memory of Britain's strategic over-extension, and its catastrophic consequences, remains at the heart of Australia's strategic culture. It has driven its continued support of alliance with America from the start of the Cold War to the present day and contributes to many of Australia's present anxieties over the condition of the United States. What has been less well remembered is that Australia's refusal to provide a fair share of the resources needed for its own and the Empire's defence between 1919 and 1939 was as culpable as any failures by the British in that period.¹

The Challenges posed by China

The rise of China has created fundamental challenges for Australia, not just because of the prospect of once again dealing with a regional great power with interests and an ideology very different to those of the West. Since European settlement, Australia's major trading and financial partners have been, if not the dominant great power then fully aligned with it. China has become Australia's primary trading partner to a degree not seen since the heyday of the British Empire when the United Kingdom fulfilled that role. Until very recently, Australia benefited greatly from its position as a reliable provider of high-quality minerals and equally high-quality

1 For a thoughtful survey of the problems that have resulted for Australia's strategic culture from its historical experience, see Michael Evans, *The Third Way: Towards an Australian Maritime Strategy for the Twenty-First Century*, Army Research Paper No. 1, May 2014. https://researchcentre.army.gov.au/sites/default/files/thethirdway_evans.pdf.

agricultural products to an expanding China hungry for all it could buy. But China's increasingly strident nationalism and apparent determination to achieve at least regional hegemony at the expense of the United States, while it resets many of the conditions of the global order, mean that such a relationship sits uncomfortably alongside its security partnership with the United States. Furthermore, trade with China has itself made Australia even more vulnerable. The attraction of the huge Chinese market meant that several industries focused their export sales almost wholly in that direction. This has proved to have an element of the saying attributed to Lenin that the capitalists would sell the rope with which they will be hanged. Australia long hoped that its economic partnership with China could be managed alongside its security relationship with the United States, but it is increasingly clear that China will not accept such a *modus vivendi*. Since the middle of 2020, China has selectively restricted Australia's imports, focusing on those deemed non-essential to the Chinese economy but being willing to accept some domestic discomfort to punish Australia for its criticism of Chinese behaviour and its alignment with the United States.

Evolving National and Maritime Strategy

The challenges are being faced and Australia's national strategy and its maritime elements are evolving rapidly. This has been apparent since the issue of the 2009 *Defence White Paper*,² which was the first official admission of the potential divergence of Chinese strategic ambitions and Australia's national interests. While the next *Defence White Paper* in 2013 was more moderate in its language,³ that of 2016 continued the trend.⁴ The latest government defence policy statement, *2020 Defence Strategic Update*, was generally careful not to name China, which was mentioned only seven times and in very general terms, but was explicit that 'habits of coop-

2 *Defence White Paper 2009: Defending Australia in the Twenty First Century: Force 2030*, (Canberra: Department of Defence, 2009). https://www.defence.gov.au/whitepaper/2009/docs/defence_white_paper_2009.pdf.

3 *Defence White Paper 2013*, (Canberra: Department of Defence, 2013). https://www.defence.gov.au/whitepaper/2013/docs/WP_2013_web.pdf.

4 *Defence White Paper 2016*, (Canberra: Department of Defence, 2016). <https://www.defence.gov.au/whitepaper/Docs/2016-Defence-White-Paper.pdf>.

eration in the Indo-Pacific are being challenged'.⁵ The *Update* also rejected the idea of a decade of strategic warning time that had long been an element in defence planning. Australia's prime minister notably made comparison with the 1930s during the public launch of the document, and there were echoes here of the British decision of 1933 to abandon their own 'Ten Year Rule'.⁶

Although it was a defence document—Australia does not issue an overall national security statement—, the *Update* indicated an understanding that the nation depends upon a functioning geostrategic ecosystem and not simply on the defence of Australian territory, in continuation of the move away from the 'Defence of Australia' strategy enunciated in the 1987 *Defence White Paper*.⁷ One driver for this has been greater appreciation of the full extent of our vulnerability. In 2021, Australia remains not only tied to the global maritime system for its economic well-being, but for survival as well. It is critically dependent upon imported petroleum and, although this is less well understood, fertilisers. Australia has 'nitrogen poor' soil and must import several million tonnes a year—at least a quarter of which would be required to grow enough food just to feed its own population. The national manufacturing base, never large, has atrophied because of cheap imports. With several refineries closed because they were considered uneconomic, Australia no longer refines aviation fuel at all and must import many specialist petroleum products. It cannot be disguised that defence of the 'sea-air gap' to the north of the continent is dependent upon imported fuel that has to come by sea, a reality confirmed when a major air defence exercise was threatened by the late arrival of a tanker.⁸

5 2020 *Defence Strategic Update* (Canberra: Department of Defence, 2020), 2.6, 22. <https://www1.defence.gov.au/strategy-policy/strategic-update-2020>.

6 Scott Morrison, 'Launch of the 2020 *Defence Strategic Update*', 1 July 2020. <https://www.pm.gov.au/media/address-launch-2020-defence-strategic-update>.

7 The best summary of this White Paper and its concepts can be found in the Australian Parliamentary Library's research paper at: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1516/DefendAust/1987

For earlier Australian defence policy documents between 1945 and 1976, see Stephan Frühling (ed.), *A History of Australian Strategic Policy since 1945*, (Canberra: Department of Defence, 2009).

8 For a study of the fuel vulnerabilities of Australia's north, see John Coyne, Tony McCormack and Hal Crichton-Standish, *Running on empty? A case study of fuel security for civil and military operations at Darwin airport*, Australian Strategic Policy Institute, Canberra, May 2020. <https://s3-ap-southeast-2.amazonaws.com/ad-aspi/2020-05/SR%20154%20Running%20on%20empty.pdf?ihVLukU0VDFsfyFGBLARhzte mVUpJo00>.

In fact, Australian defence policy has formally espoused a ‘maritime strategy’ for nearly two decades.⁹ Its first manifestation was the subject of a parliamentary enquiry in 2004, one which identified many of the discontinuities between the government’s stated intent and its execution, at least at the start of the twenty-first century.¹⁰ What is coming into being, however, is an effort whose major components align very closely with the key elements of NATO’s maritime strategy of 2011: deterrence and collective defence; crisis management; cooperative security; outreach through partnerships, dialogue and cooperation; and maritime security. These provide a useful framework for considering Australia’s strategic approach overall and in the maritime domain in particular. As NATO has found with that strategy, however, what matters are *how* it is implemented and *with what capabilities*. The rise of the revisionist major powers is requiring careful reordering of Australian priorities and the allocation of greater resources than in the recent past. In the maritime domain, this parallels NATO’s recent work to improve the ‘Allied Maritime Posture’ and its combination of deterrent effect, maritime security operations and improved warfighting capabilities.

Deterrence and Collective Defence

Australia is arming itself, albeit at a slower rate than seems appropriate, in an ever more challenging security environment. The submarine fleet will increase from six to twelve boats, a new class of frigates has been ordered, while its amphibious force will be further developed. There is a new emphasis on long range strikes and the extension of such capabilities to more platforms—sea, air and land-based. Greater efforts are being made to extend Australia’s national surveillance capabilities as well as its space-based communications and reconnaissance assets. From all this, the government’s intention is to possess capabilities which can have a deterrent effect, albeit in non-nuclear warfare only, and strategic weight in their own right, while also providing the potential to contribute to alliance and coalition operations in substantial ways. The most recent signal of this policy was

9 For the progress of Australian policy, starting with the 2003 *Defence Update*, see https://www.apf.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1516/DefendAust/NationalSecurity.

10 Joint Standing Committee on Foreign Affairs, Defence and Trade, *Australia’s Maritime Strategy*, 21 June 2004. https://www.apf.gov.au/Parliamentary_Business/Committees/Joint/Completed_Inquiries/jfadt/maritime/report.

the order for an additional two P-8A *Poseidon* maritime patrol aircraft to bring the Australian fleet to 14. Given that the American global force is likely to include no more than 117 aircraft, this is indicative of the growing *relative* importance of Australia's potential alliance contribution in many areas.

Australia is also seeking to become more resilient in ways that have important maritime aspects. Apart from the government's efforts to increase oil stockpiles and extend subsidies to the operation and modernisation of refineries, the national shipbuilding programme is seen as a key element for developing industrial and technological capabilities which will also support the sustainment and repair of Australian forces in major conflicts.

Crisis Management

It is an exaggeration to say that Australia is 'recalling the legions', but its intent to reduce the long-standing Australian effort, particularly its maritime element, in the Middle East is explicit. Frigate deployments are being wound down and the commitment of command and headquarters staff reduced or ended outright.¹¹ This reflects a realisation that Australia must focus on its 'immediate' region, which the *Strategic Update* defined as 'ranging from the north-eastern Indian Ocean, through maritime and mainland South East Asia to Papua New Guinea and the South West Pacific'—an area which still represents a substantial percentage of the earth's surface. It also, critically, recognises the requirement for any national effort, both in crisis and in normal conditions, to have strategic weight. With its limited numbers and finite resources, achieving such levels of activity has never been easy for Australia, but will be vital for the country to have any chance of sending signals to China that will be heard. Semi-token deployments of individual units are being replaced by substantial task group efforts, the most notable being the annual deployments in the 'Indo-Pacific Endeavour' series. While the primary focus of each 'Indo-Pacific Endeavour' shifts between the Indian Ocean and the Western Pacific, it is no accident that almost all of them have a significant South East Asian element, including entry into the South China Sea.

11 'Australia concludes its contribution to the international Maritime Security Construct', Department of Defence, 29 December 2020. <https://news.defence.gov.au/media/media-releases/australia-concludes-its-contribution-international-maritime-security-construct>.

Cooperative Security

Australia's alliance with the United States remains a key element, but new partnerships with other middle powers are being sought and existing ones strengthened. Thus, defence ties with Japan have been extended, as they have with India, and all three powers have combined with the United States in the semi-formal 'Quad' alignment. Important confirmation of the way this is evolving came with Australia's inclusion in the Indian-led *Exercise Malabar* in November 2020. This saw the frigate HMAS *Ballarat* operate with an Indian naval task group and units from both Japan and the United States.

Australia is also seeking to strengthen its links, many long-standing, with the nations of maritime South East Asia. These must be managed with special care. While the states around the littorals of the South China Sea are the primary victims of China's expansionist efforts in the maritime domain, the fear of Chinese power and the economic opportunities which China offers combine to restrict responses to the challenge to their sovereign rights. Furthermore, Australia's assumption that it is a contributor to the security of the region and that its naval and air presence is wholly legitimate must now face a barrage of Chinese accusations that it is an intruder and a power external to the region—notwithstanding the reality that Darwin is considerably closer to Singapore than Shanghai is. This makes relationships such as the Five Power Defence Arrangements with Malaysia and Singapore both even more important than in the past and in need of tactful management. Such complexity is not new, given Indonesia's sensitivity to a construct devised in the early 1970s with the recent history of confrontation in mind, but China is another problem entirely.

Outreach through partnerships, dialogue and cooperation

There are other important political and economic elements to Australia's maritime strategy. That a 'whole of nation' response will be required has been emphasised by China's use of trade as a political and economic weapon, but China's growing influence around the region has forced Australia to consider how to respond without exacerbating the situation. Not all Chinese initiatives are inherently undesirable, despite the growing tendency towards 'wolf warrior' diplomacy and a longer standing tendency towards dubious 'money politics' in the region. The reality is that Australia still seeks a secure and mutually beneficial relationship with Chi-

na for both itself and other nation states and achieving a reasonable balance between cooperation and competition is a key aim of its policies.

Such non-military aspects are most evident in the South West Pacific, where Australia, through its 'Pacific Step-up',¹² is seeking to restore its position as a partner of first choice for the Pacific Island Countries (PICs) and balance the rising influence of China. Its naval deployments are focused very much on supporting maritime security and capacity building. Australia is particularly conscious of its responsibilities in humanitarian assistance and disaster relief, activities which have been notably helpful in improving the often fractious relationship with Fiji in particular. The despatch of the large amphibious ship *Adelaide* to Fiji on Christmas Eve 2020 in the wake of Cyclone *Yasa* was almost a routine event. The government currently plans to acquire a civilian manned support vessel which will be employed to support the Australian presence in the region.

The Pacific Island Countries have benefited greatly from the inception of the Exclusive Economic Zone and the fishery resources which have come under their control. While regional management of the valuable tuna fishery has been a success story, the PICs have neither the people nor the money to manage the surveillance and response tasks unassisted. Long-standing arrangements between an older 'Quad' involving Australia, France, New Zealand and the United States are one mechanism by which resources are made available. Australia's very successful Pacific Patrol Boat programme has been another. Starting in 1983, 22 Forum class patrol boats were built and donated to 12 PICs, supported not only by robust training programmes but expert operational and technical advisers, as well as logistics and regular refits. The PICs welcomed an arrangement which gave them effective sovereign capabilities while limiting the demand on their own resources. This successful effort has been renewed in the Pacific Maritime Security Program. 19 new boats are being built for 12 PICs, with two more going to Timor-Leste. The eighth Guardian class boat to be completed was handed over to Tonga at the end of October 2020. The building programme will be completed by 2023, but Australia's aid, assisted by New Zealand, will continue indefinitely, including an in-service support centre for the Guardian class in northern Queensland. The military element of these programmes is explicitly limited. This emphasis on maritime security and law enforcement not only reflects the real needs of the PICs, but also their and Australia's desire that the region should not become an area of great power confrontation.

12 <https://www.dfat.gov.au/countries/pacific-step>.

The Antarctic is another region which occupies an increasingly important place in Australian maritime strategy. The Antarctic Treaty and its associated regimes have been of considerable benefit to Australia in particular. Its extensive territorial claims have not become the subject of open contest, while the continent has remained demilitarised and nuclear free. China's increasing interest has been accepted as inevitable and the relationship between the scientific and logistic operations of both nations is generally cooperative, which was demonstrated as recently as December 2020 when Chinese assistance was critical to the medical evacuation of a sick Australian.¹³ Nevertheless, the scale of Chinese development on the continent—a fifth base will open in 2022—and the noisy rhetoric about its Antarctic commitments (still much smaller than those of the US) have created uncertainty about its long-term intentions. Given that Australia's interests depend directly on the continuation of the current arrangements, the Australian government has increased its scientific commitments and provided for the replacement of a long-serving supply ship with a much larger and more capable icebreaker, *Nuyina*, which will begin operations in 2021.

Australia and Europe in Maritime Strategy

Australia welcomes Europe's renewed interest in the Indo-Pacific and its recognition of the unacceptable elements of China's new assertiveness. It sees NATO and Europe as important elements in its search for partners. But a combination of Australia's historical experience and a dispassionate calculation of the hard power which Europe can exert on the other side of the globe mean that there is ambivalence about what some European powers claim to be able to do, particularly those, unlike France, which no longer have significant territorial interests in the region. To give one example, the promised deployment of the new aircraft carrier *Queen Elizabeth* to East Asia in 2021 is certainly a welcome signal of British interest and its concerns over China's behaviour,¹⁴ but it will inherently be transient and

13 AAP 'China helps evacuate sick Australian from Antarctica in five-day mission', *The Guardian*, 25 December 2020. <https://www.theguardian.com/world/2020/dec/25/china-helps-evacuate-sick-australian-from-antarctica-in-five-day-mission>.

14 Stephen Kuper, 'Rule Britannia: Royal Navy commits to Indo-Pacific carrier deployment', 15 July 2020, *Defenceconnect*. <https://www.defenceconnect.com.au/maritime-antisub/6458-rule-britannia-royal-navy-commits-to-indo-pacific-carrier-deployment>.

must come at the cost of the capacity of a severely depleted Royal Navy to manage a short-notice crisis in the European theatre.

There is also another dimension. Australia wants Europe to help reduce America's current strategic over-extension. Although acutely aware of the problematic behaviour of Putin's regime, Australia believes that China represents a greater challenge for the United States than Russia, however troublesome the latter might be, and that America should give priority to the Indo-Pacific. There is also the view that an assumption of the 'Pacific Pivot' of the Obama administration was that the European powers would assume more of the burden of deterring Russia than has proved the case by 2021. There is a tendency for the strategic establishment in Washington DC to look first across the Atlantic and there is a belief in Australia that Europe has taken advantage of this. Despite some redeployment of US forces and the stronger anti-Chinese rhetoric of the Trump administration, the full intent of the 'Pivot' has not been realised because American forces have had to maintain a greater presence in Europe than would be required if all the NATO nations were to pull their weight.

One other NATO and Pacific power deserves mention in this context: Canada. It suffers from the 'tyranny of distance' as much as Australia and not only has to look to the Atlantic but to the Arctic and the threats there of Russian claims—and Chinese meddling. Nevertheless, it will be important for Canada to continue to extend its own 'Pacific pivot', as demonstrated in its recent involvement in the sanctions programme against North Korea and ship visits around South East Asia. Even more important—and valuable—will be further increases in Canadian maritime capabilities, particularly for high intensity warfare.

In sum, Australia welcomes European powers having an active role in the Indo-Pacific and regular deployments of European naval forces in the region, but a more coherent geostrategic approach would see Europe focus—and increase—its naval and military efforts on Europe, while the United States and other Indo-Pacific powers continue to reorganise to balance China.

Put another way, Australia values the importance of the political messages sent to China by European deployments to the Indo-Pacific, particularly when they are accompanied by multinational exercises and assertions against excessive maritime claims, something both the United Kingdom

and France have done in recent years¹⁵ and which NATO's intent for its maritime units to be able to 'operate without constraint' implies.¹⁶ Such recognition of the political value of a European presence was also made by the Japanese in recent discussions with the German minister of defence.¹⁷ This is why the German plans for deployment in 2021 are welcome, as is the promise of stronger navy to navy relations.¹⁸ But such valuation does not extend to the expectation that Europe could provide more than token support in an Indo-Pacific contingency if there were to be any possibility of a simultaneous Russian venture, such as against the Baltic states. The extent to which China and Russia are making common cause suggests that a crisis in East Asia could well be accompanied by one in Europe.¹⁹

Divisions of efforts are never wholly straightforward, and the need to maintain energy security and manage instability in the Middle East and Africa may well see continuing European operations at great distances from the European theatre. Maritime security remains a concern in the north-western Indian Ocean in particular. All these problems may also require Australian contributions in some form. But deterrence depends upon capability, and maintaining sufficient capability will depend increasingly on focused efforts, particularly in relation to high intensity operations. With limited numbers of hulls, that focus must involve some element of geographic concentration. If NATO is serious about 'Allied Maritime Posture', being strong in the Mediterranean, Baltic and Norwegian Seas, as well as in the Arctic and the Atlantic Ocean, will be challenge enough.

At the same time, Australia is aware there are many threats for which closer cooperation will be essential. These threats, notably in the cyber do-

15 Both nations contested claims in the South China Sea in 2018, most notably when HMS *Albion* contested Chinese claims to baselines around the Paracels. FNS *Vendemiaire* transited the Taiwan Strait in 2019.

16 'NATO's Maritime Activities', 20 June 2019. https://www.nato.int/cps/en/natohq/topics_70759.htm.

17 Julian Ryall, 'Japan calls on Germany to send warship to East Asia', *DW*, 18 December 2020. <https://www.dw.com/en/japan-germany-china-defense-challenges/a-55985940>.

18 Eryk Bagshaw and Latika Bourke, 'Germany refuses to turn a "blind eye" to China, teams up with Australia', *The Sydney Morning Herald*, 2 November 2020. <https://www.smh.com.au/world/asia/germany-refuses-to-turn-a-blind-eye-to-china-teams-up-with-australia-20201102-p56apf.html>.

19 See Paul Dibb, *How the geopolitical partnership between China and Russia threatens the West*, Special Report 148, (Canberra: Australian Strategic Policy Institute, 2019). <https://www.aspi.org.au/report/how-geopolitical-partnership-between-china-and-russia-threatens-west>.

main, may transcend geography but will have profound implications for the maritime sphere, not only in relation to state-based efforts, but across the spectrum of human activity at sea. NATO's increasing focus on improved maritime domain awareness is thus a welcome development, as are the contributions of Europe to other maritime security arrangements.²⁰ In a way, this is only an extension of the long-standing alliance naval control and guidance of shipping framework that has worked so well and in so many regions in the past.

Australia also believes that cooperative maritime efforts in other areas will not only have benefits in their own right, but will flow on to improve the strategic environment. This is why the European Union aid efforts in the South Pacific are particularly welcome and why NATO powers, many of whom are signatories to the Antarctic Treaty, should encourage their own scientific efforts in the region and seek to be heard in the multinational fora associated with the treaty regime and its web of supporting conventions.

Conclusion

The recent initiatives by both NATO and Australia to respond to emerging strategic challenges in the maritime domain are sufficiently congruent to give reason for optimism, albeit cautious optimism. Nevertheless, their success will depend both upon the continued commitment of resources at greater levels than in the recent past, and on ensuring that our efforts are complementary in every sense. This will require sensible divisions of responsibility and, at the same time, a readiness to identify and action initiatives which can make a difference to the levels of mutual support which can be provided. All this will involve not only the cooperation of navies and maritime security authorities, but diplomats, aid agencies, business and even scientists. In the end, the successful implementation of any mar-

20 Four European nations are contracting parties to the Singapore-based Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). See https://www.recaap.org/about_ReCAAP-ISC.

itime strategy has both national and multinational elements across the spectrum of conflict.

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Section 3: Opportunities and Challenges

The Alliance's Reinforced Maritime Posture: Strengthening NATO's Deterrence and Defence at Sea

Sarah Tarry and Kaspar Pajos¹

Introduction

Strategic importance of the maritime domain

In an era of increased globalisation, states, societies and commercial entities find themselves profoundly dependent on overseas trade, as well as access to global markets, natural resources and communications networks. The world's oceans are increasingly busy maritime highways. Currently, more than four-fifths of the world's merchandise trade by volume is carried by sea.² Furthermore, undersea cables lying on the seabed are used to transmit an estimated 97% of global communications.³ Such volumes highlight the strategic importance of being able to ensure unhindered access to the maritime environment. The re-emergence of great power competition makes this imperative even more relevant in the future. NATO and its allies recognise this challenge and, in recent years, the alliance has taken a number of important steps to reinforce its maritime posture in order to successfully deter potential adversaries and to ensure much-needed access to markets, resources and communications during peacetime, crisis or conflict.

NATO's evolving role

NATO was founded in 1949 as a collective defence organisation. Its navies played a critical role in signalling the alliance's capabilities and resolve

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2 UNCTAD, *Review of Maritime Transport* 2020, 20.

3 Sunak, *Undersea Cables*, 5.

against the Soviet Union during the Cold War, as major deployments and exercises were used to demonstrate NATO's collective maritime strength and solidarity.⁴ Following the collapse of the Soviet Union, NATO's focus changed and it became an external security provider, most notably undertaking crisis response operations in the Balkans, Afghanistan and Libya. It also undertook lower-intensity counterterrorism and counter-piracy operations in the Mediterranean Sea and Indian Ocean in cooperation with its partners. Following Russia's invasion of Ukraine and the illegal occupation of the Crimea, as well as the continuing international threat posed by terrorism, NATO placed a renewed emphasis on deterrence and collective defence, while, at the same time, remaining engaged in projecting stability in its neighbourhood through crisis management and cooperative security activities.⁵ This is the essence of NATO's 360° approach to security today, which seeks to deter threats, and, if necessary, to defend against any adversary.

Threats and challenges

The current security environment presents NATO with a number of distinct threats and challenges.⁶ While instability and continuing crises across the Middle East and North Africa are fuelling terrorism, NATO's greatest challenge in the maritime domain is to effectively deter an encompassing Russian threat, which is manifested by the surge of Russian naval capabilities into the North Atlantic, the Baltic and the Mediterranean. Russia has also expanded its fleet in the Black Sea, and there is an increased likelihood that Syrian ports could become a Russian stronghold in the Mediterranean for an extended period of time.⁷ There has also been an increase in Russian submarine activity.⁸ Russia is modernising its sea-based deterrent forces, anti-ballistic missile systems and is developing high-end strategic capabilities.

4 Hudson, "The Renaissance at Sea", 24.

5 This also includes the Defence and Related Security Capacity Building (DCB) Initiative that was launched at the Wales Summit in 2014. As part of this Initiative, NATO is implementing DCB packages for Georgia, Iraq, Jordan, Moldova and Tunisia and has also received a request for DCB support from Libya.

6 For a more detailed overview, see NATO, "London Declaration", paragraph 3.

7 Schroeder, *NATO at Seventy: Filling NATO's Critical Defence-Capability Gaps*, 18.

8 Alleslev, *NATO Anti-submarine warfare: rebuilding capability, preparing for the future*, 1.

ties that could potentially disrupt or deny allied operations.⁹ It has reinvigorated its warship construction with modern frigates, corvettes and patrol boats armed with long-range anti-ship and land-attack cruise missiles and is testing electronic spectrum jamming and manipulation, GPS disruption and the ability to interfere with undersea cables and pipelines.¹⁰ Looking further east, the alliance is witnessing the rise of China as a great naval power, which is increasingly present in the Euro-Atlantic area. In recent years, Russia and China have conducted joint naval exercises both in the Mediterranean and in the Baltic. At the same time, China has increased its emphasis on maritime security as a means to defend its geostrategic interests, and the Chinese navy keeps expanding its capabilities for power projection along vital waterways.¹¹

Coherence and the 360° approach

The Alliance Maritime Strategy, agreed in 2011, states that “deterrence relies upon proven capability, demonstrations of readiness, and effective strategic communications”.¹² While some observers¹³ have argued that this Strategy, written three years prior to Russia’s military intervention in Ukraine, needs updating, this key statement certainly remains relevant in light of the alliance’s ongoing adaptation efforts. Since 2014, NATO, as part of its 360° approach to security, has been implementing the biggest reinforcement of its collective defence since the end of the Cold War. In practical terms, this has meant that the alliance has undertaken efforts to strengthen its deterrence and defence posture and to bolster its readiness, responsiveness and ability to reinforce any ally in response to threats from any direction. One of the main challenges is to establish coherence in the alliance’s overall posture so that it remains credible across all domains and geographic regions. Implementing NATO’s 360° approach requires multi-domain integration, but also capable, flexible, rapidly deployable, interoperable and sustainable maritime forces¹⁴ that can perform low-end and

9 Olsen, “Introduction: The Quest for Maritime Supremacy”, 3–7.

10 Bergeron and Blount, “VII. NATO’s Maritime Domain”, 92.

11 Gresh, “The new Great Game at sea”.

12 NATO, “Alliance Maritime Strategy”, paragraph 9.

13 For example, see Sundstrom, “An adequate NATO maritime posture: the missing element for deterring Russia” or Allport, “NATO needs a new Maritime Strategy for its Northern Flank”.

14 NATO, “Alliance Maritime Strategy”, paragraph 18.

high-end tasks in both littoral and blue waters, if necessary. The recent efforts to reinforce the alliance's maritime posture contribute to this requirement and are important for achieving coherence in the alliance's overall posture.

The Alliance's Reinforced Maritime Posture

Since the Wales Summit in 2014, NATO has set a renewed course for strengthening its maritime posture. At the Brussels Summit in 2018, this work was brought together under the heading of the alliance's Reinforced Maritime Posture.¹⁵ This constitutes a policy framework that sets out how the alliance could employ its naval forces more effectively. Today, its implementation is well under way and this has served to reinvigorate the alliance's core maritime abilities and warfighting function, which had been neglected during the "peace dividend" of the post-Cold War era. Its continuing implementation, coupled with the focus on high-end maritime capabilities addressed in the NATO Defence Planning Process (NDPP), will lead to an even more credible alliance maritime posture that will further strengthen deterrence and defence and also serve to improve the allies' collective maritime skills and readiness for all types of operations. In doing so, the Alliance's Reinforced Maritime Posture also serves to support the implementation of the Alliance's Maritime Strategy.

The Alliance's naval forces

Standing Naval Forces

NATO's Standing Naval Forces (SNF) are the core maritime capability of the alliance and a centrepiece of NATO's maritime posture.¹⁶ The SNF provide the alliance with a continuous naval presence and warfighting capability on the seas, as its two Standing NATO Maritime Groups and two Standing NATO Mine Countermeasure Groups persistently carry out their programme of patrols, scheduled exercises, manoeuvres and port visits. In recent years, NATO has made significant efforts to increase its responsiveness. As part of these efforts it has enhanced its rapid-reaction force—the

15 NATO, "Brussels Summit Declaration", paragraph 19.

16 NATO, "Warsaw Summit Communiqué", paragraph 48.

NATO Response Force (NRF)—by increasing its readiness and size. In the maritime domain, these efforts have led to the enhancement of the SNF with additional capabilities and the integration of the SNF's four Maritime Groups into the NRF. As a result, the SNF are now also increasingly capable as a rapid response force that could also act as a first responder. For an alliance of 30 nations, demonstrating interoperability remains vital for maintaining credible deterrence and defence, and multinational participation in the SNF enhances this by offering a continuous way for allied platforms to operate as an integrated force. Nevertheless, the SNF's value goes beyond ensuring the alliance's responsiveness and interoperability, as they are also used as a cooperative security enabler by offering opportunities through training with partners and port visits.

NATO Readiness Initiative

In case of crisis or conflict, the SNF would need to be quickly supported by allied follow-on naval forces. Thus, the alliance must also demonstrate the readiness of its other forces in order to reduce the threat of miscalculation and to remove the pursuit of a short war or *fait accompli* from potential adversaries' calculus. In recent years, the alliance has taken steps to reinvigorate its culture of readiness. As part of these efforts, NATO leaders launched the NATO Readiness Initiative (NRI) during the Brussels Summit in 2018.¹⁷ In the maritime domain, its implementation will mean that 30 major naval combatants with enabling forces will be organised and trained as elements of larger combat formations and these will be persistently held in high readiness. As a result, the NRI will further enhance the alliance's rapid response capability, as these naval forces could be used for rapid military crisis intervention or for reinforcement of allies in support of deterrence or defence.

Coordination with allied naval forces under national command

In addition to contributions to the SNF, the NRI and NATO exercises and operations, the allies have substantial naval forces under national command. These are also valuable assets and their availability is supported by the NDPP, which defines the pool of forces that could be made available

17 NATO, "Brussels Summit Declaration", paragraph 14.

to NATO. After all, the SNF only represent a small, spearhead element of the alliance's collective naval strength, and NATO's true maritime power lies in the SNF's ability to rapidly join high-capability national task groups with high readiness.¹⁸ Such coordination between the SNF and national units or task groups can be used to amplify the delivery of desired strategic effects, which, in turn, can lead to a stronger and more coordinated deterrence posture. In this way, even when the majority of allied naval forces remain under national command, they still make an important contribution to maintaining a unified alliance maritime presence. Leveraging this ability is a priority for the Allied Maritime Command (MARCOM) that, in recent years, has extensively focused on strengthening its linkages to other allied as well as partner maritime stakeholders. As part of these efforts, a new framework has been developed that encourages and facilitates timely information exchange, and will allow MARCOM to be both a hub and a portal for tracking events at sea and for consultations on how to respond.¹⁹ Having such a network in place in peacetime will allow MARCOM to fulfil its role in crisis and conflict better and, in this way, strengthen NATO's deterrence and defence posture.

Standing integrated command structure

NATO Command Structure Adaptation

Throughout its history, one of NATO's great strengths has been its standing integrated command structure, often considered the military backbone of the alliance. Over the years, the NATO Command Structure (NCS) has undergone a great deal of reorganisation to keep it fit for purpose and capable of providing command and control in all contingencies. This was also the idea behind the latest NCS adaptation, which was endorsed by NATO leaders at the Brussels Summit in 2018.²⁰ While previous post-Cold War adaptations had resulted in a substantial decrease in personnel, this trend was reversed in 2018 with the authorisation of more than 1,200 additional staff. This personnel increase has enabled NATO to strengthen its existing headquarters and to enhance its command and control at the stra-

18 MARCOM, "NATO Maritime Group Exercises with French Carrier Strike Group".

19 Bergeron and Blount, "VII. NATO's Maritime Domain", 101–102.

20 NATO, "Brussels Summit Declaration", paragraph 29.

tegic and operational levels as well as across domains. The adapted NCS has also further strengthened the alliance's regional understanding through stronger linkages with the NATO Force Structure²¹ and national headquarters.

Strengthening MARCOM's contribution

As part of NCS adaptation, MARCOM has grown in numbers, and this has allowed it to take on an increasingly important role. Within MARCOM, several structural changes have been made to enable it to fulfil its new mandate as NATO's 360-degree Maritime Theatre Component Command overseeing the many maritime challenges which cover the full spectrum of missions. In addition to previously existing subordinate commands for submarine and maritime air forces, MARCOM has recently established a separate subordinate command for surface naval forces. MARCOM has also set up a newly established Theatre Maritime Operation Centre, which will facilitate the command and control function of the three subordinate commands and support MARCOM in its role as the Theatre Component Command. Establishing this operation centre is an important step for the alliance in moving towards more comprehensive 360° maritime situational awareness, as it can be used to compile a recognised maritime picture that can be shared with allies' joint and maritime operation centres.²²

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- 21 NATO Force Structure (NFS) provides the alliance with rapidly deployable, mobile, sustainable and flexible multinational forces and their command and control capabilities. The NFS is composed of allied national and multinational forces and HQs placed at the alliance's disposal on a permanent or temporary basis under specific readiness criteria. These provide a pool of forces in order to allow for a high degree of flexibility to meet the requirements of conducting and sustaining operations. In the maritime domain, there are four deployable headquarters that are able to command and control assigned forces up to NATO Task Force level: Headquarters Commander Italian Maritime Forces; Headquarters Commander French Maritime Forces; Headquarters Commander Spanish Maritime Forces; and Headquarters Commander United Kingdom Maritime. In addition to these, through the Naval Striking and Support Forces, NATO is able to offer command and control up to NATO Expanded Task Force level.
- 22 MARCOM, "NATO Command Structure Adaptation: MARCOM activates Surface Command".

Strengthening regional command and control

NCS adaptation has also resulted in NATO strengthening its regional command and control arrangements. To this end, a new Joint Force Command has been established in Norfolk, United States, in addition to the two existing ones in Brunssum, the Netherlands, and Naples, Italy. The establishment of JFC Norfolk was born out of allied assessment of a changing security environment in which the North Atlantic is again seen as a critical region. This new headquarters is co-located with the United States Second Fleet. Its primary responsibility is to protect the vital lines of communication between Europe and North America and to ensure that crucial routes for reinforcements and supplies from North America to Europe remain secure. It provides command and control arrangements, maintains situational awareness, conducts exercises and draws up operational plans covering vast geographic areas, from the United States East Coast, past the GIUK gap²³ and into the Arctic.²⁴ It has recently declared its initial operational capability and is expected to reach full operational capability by the end of 2021. The establishment of this headquarters is of particular importance for the transatlantic alliance, as it is the first NATO headquarters dedicated to the Atlantic since 2003.

Exercises and interoperability

NATO's enhanced exercises programme

NATO's enhanced exercise programme is an important element of the Alliance's Reinforced Maritime Posture. In recent years, NATO has tailored its exercise programme to better support reinvigorating the alliance's collective maritime warfighting skills. As a result, NATO and its allies are now increasingly using maritime and joint exercises to develop and maintain their key warfighting abilities. Some areas of responsibility that are being increasingly incorporated into NATO and allied exercises include the protection of sea lines of communication and rapid reinforcement, carrier strike, amphibious forces, anti-submarine warfare capacity, integrated air

23 The GIUK gap refers to a strategically important naval chokepoint in the North Atlantic. Its name is an acronym for Greenland, Iceland and the United Kingdom, and gap refers to the open ocean between these three land masses.

24 NATO, "NATO's new Atlantic Command declared operational".

and missile defence, as well as countering cyber and hybrid threats. Developing and maintaining these key responsibilities are necessary to ensure that the alliance is able to not only engage in low-intensity maritime tasks, but also to defend itself against peer adversaries. At the same time, exercises also serve to strengthen deterrence by demonstrating the alliance's capabilities and readiness, thereby affecting the strategic calculus of potential adversaries.

Bringing back NATO's anti-submarine warfare capacity

Anti-submarine warfare exercises are a good example of NATO utilising exercises to develop its collective maritime warfighting skills and demonstrate the alliance's capabilities and readiness for strategic messaging. In recent years, there have been numerous studies highlighting the need to protect transatlantic sea lines of communication against the Russian submarine threat.²⁵ To be able to counter it, the alliance is reinvigorating its anti-submarine warfare capacity through its enhanced exercise programme. This has resulted in anti-submarine warfare being exercised with greater regularity and on a greater scale. A recent example of this is NATO's annual anti-submarine exercise Dynamic Mongoose held in the North Atlantic. Its 2020 iteration featured submarines from five allied nations training together with surface ships from four allied nations. The exercise was also supported by allied maritime patrol aircraft and host nation support.²⁶ Similar cooperation and integration take place regularly in the Mediterranean with the annual anti-submarine warfare exercise Dynamic Manta. Both exercises contribute to developing collective maritime skills, but also to fostering interoperability between allies.

Utilising joint exercises for multi-domain integration

But it is not only interoperability between naval forces that matters. With its recent strategic military concept for the deterrence and defence of the

25 For example, see Hicks et al., *Undersea Warfare in Northern Europe*; Nordenman, "Back to the Gap: The Re-Emerging Maritime Contest in the North Atlantic"; Allport, *Fire and Ice: A New Maritime Strategy for NATO's Northern Flank*; and Nordenman, *The New Battle for the Atlantic: Emerging Naval Competition with Russia in the Far North*.

26 NATO, "NATO maritime exercise Dynamic Mongoose ends in the High North".

Euro-Atlantic area, NATO is increasingly focusing on multi-domain integration. After all, NATO operates jointly, and its navies can only succeed as part of a multi-domain effort. Surface, sub-surface and above-surface capabilities and forces must work together to support joint forces and help deliver joint results. In recent years, NATO and its allies have increasingly been using exercises to practise such multi-domain integration. The most prominent example was the exercise Trident Juncture 2018, which was conducted in Norway. NATO used this exercise to test its ability to rapidly reinforce an Ally, but also to test the interoperability of allied and partner air, land, maritime, special operations and amphibious forces needed for such an operation. Around 50,000 troops, 250 aircraft, 65 vessels and up to 10,000 vehicles took part, effectively making it NATO's biggest exercise in recent years.²⁷ On a smaller scale, reinforcement and multi-domain integration are also regularly practised. The annual United States-led multinational joint exercise BALTOPS is a good example. Its 2019 edition featured around 8,600 troops from 18 different countries and involved maritime, air and ground forces with about 50 ships and submarines, as well as 40 aircraft.²⁸ Several amphibious assaults were an important feature of this exercise, highlighting the alliance's efforts to rebuild this capability.

Exploiting new technologies

In addition to multi-domain integration, NATO and its allies are also increasingly looking for ways to exploit opportunities provided by new technologies. This has been declared a major priority for the alliance.²⁹ A number of initiatives established by allies and NATO bodies, such as the Centre for Maritime Research and Experimentation (CMRE), are under way and cover a broad spectrum of maritime engagement. Allies are increasingly looking to utilise unmanned systems, and NATO can facilitate this by bringing coherence to national efforts and by acting as a network. In this context, in 2018, 13 allies launched the NATO Maritime Unmanned Systems (MUS) Initiative.³⁰ It aims to utilise world-leading research to increase allied interoperability between conventional forces and unmanned

27 NATO, "Trident Juncture 2018 media resources".

28 NATO, "NATO navies test readiness in Baltic Sea".

29 NATO, "London Declaration", paragraph 6.

30 Since 2018, three allies and one partner country have further joined the initiative. For more information, see NATO, "Two Allies and one partner join the Maritime Unmanned Systems (MUS) Initiative".

drones, to establish new tactics that truly leverage these technologies and to develop secure digital communications for military drones across domains. Addressing these priorities could enable the use of unmanned systems on a greater scale across the alliance. The first steps towards this have already been taken. In 2019, seven allies together with the CMRE, academia and industry conducted the world's largest and most complex maritime unmanned systems exercise off the coast of Portugal. The results were impressive, with maritime unmanned systems augmenting conventional forces in many scenarios.³¹ The increasing use of such novel systems enhances several key capabilities, such as maritime situational awareness, mine-counter measures or anti-submarine warfare.

Cooperation with partners

While NATO remains an important actor in global maritime security, it is also continuously looking for ways to cooperate with partners. In recent decades, the alliance has placed significant emphasis on projecting stability, which in the maritime domain could be described as the fusion of its crisis management, cooperative security and maritime security tasks.³² Interaction and cooperation with partners has been wide-ranging. The SNF, through its training with partners and port visits, has been an important tool, but NATO's cooperative security efforts go beyond this and also involve maritime headquarters. This was first seen in Operation Active Endeavour³³ in the Mediterranean. Over the years, this evolved into a network-based operation mainly focused on collecting and processing information from various sources, including partner Maritime Operation Centres and vessels. Similarly, information sharing and coordination with partners was also key to Operation Ocean Shield in the Indian Ocean, where many other actors were simultaneously deployed and a Shared Awareness and Deconfliction (SHADE) mechanism was developed to share informa-

31 Brasseur, Murray and Trevethan, "NATO's 'startup' charts a bold future in maritime unmanned systems".

32 Moon, *NATO and the Future Role of Maritime Power*, 9.

33 Operation Active Endeavour was one of eight initiatives launched in response to the 9/11 terrorist attacks against the United States in 2001. Under Operation Active Endeavour, NATO ships patrolled the Mediterranean and monitored shipping to help deter, defend, disrupt and protect against terrorist activity.

tion and coordinate efforts.³⁴ NATO has learned a lot from these valuable operational engagements and is now applying its lessons learned in Operation Sea Guardian, which has succeeded Operation Active Endeavour in the Mediterranean. NATO has also engaged with regional actors through SHADE MED³⁵ and continues to look for ways to increase coordination and facilitate information exchange with partners to enhance the alliance's maritime situational awareness.

Conclusion

NATO's naval renaissance

Since 2014, NATO's renewed emphasis on deterrence and collective defence has been well reflected in the Alliance's Reinforced Maritime Posture. Many of the skills that had atrophied during the "peace dividend" of the post-Cold War era are once again being prioritised. In what could be considered a "naval renaissance", the alliance has focused on rebuilding its collective maritime warfighting skills, including by utilising maritime and joint exercises to develop its capabilities and foster interoperability. These collective efforts demonstrate to potential adversaries the alliance's capabilities, responsiveness, readiness and ability to reinforce all allies in support of deterrence or collective defence. Such a demonstration is important, as reemerging great power competition is likely to make unhindered access to the maritime environment increasingly indispensable for allied security. In this context, sea power will remain a key instrument in the promotion and protection of allied political, economic and diplomatic interests. The alliance will likely continue to face an increasingly unpredictable security environment that continues to feature a resurgent Russia and the rise of China. Taking this into account, NATO should remain an essential maritime forum for allies to develop a common appraisal of the changing maritime environment and to balance naval requirements and resources between NATO and other missions, operations and activities. While NATO has developed a robust set of maritime tools to deal with distinct threats and challenges, the effectiveness of the Alliance's Reinforced Maritime

34 MARCOM, "Cooperative security in the maritime domain and MARCOM's vital role".

35 The Shared Awareness and De-Confliction mechanism in the Mediterranean.

Posture will ultimately be dependent on the allies' continued commitment of assets and their use in the most effective way.

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Allied Navies in the 2020s: High-End Threats, Low-End Challenges and Promising Opportunities

Jeremy Stöhs

Introduction

The re-emergence of strategic competition between great powers has prompted increasing investments in high-end military capabilities. This chapter¹ discusses the significance of great power competition for the maritime forces of medium-sized and small NATO and EU members. It argues that, against the backdrop of an increasingly competitive global security environment, these forces (hereafter referred to as ‘allied’ navies²) struggle to reach quickly rising capability thresholds. Through the skilful application of novel strategies, doctrines and technologies, competitors such as Russia or China could gain a competitive advantage. In fact, they could potentially render obsolete those naval formations unable to develop the capacity to conduct naval warfare at the high end of the intensity spectrum.

To support this argument, the author identifies several key challenges for allied navies and their potential adverse effects on deterring aggression

1 This chapter is based on a recent study written for the Centre for Military Studies at the University of Copenhagen: Jeremy Stöhs, *How High? The Future of European Naval Power and the High-End Threat*, (Copenhagen: Djøf Publishing & CMS Copenhagen, 2021).

<https://cms.polsci.ku.dk/english/publications/how-high-the-future-of-european-naval-power-and-the-high-end-challenge/>.

2 In this context, the terms ‘allies’ and ‘allied navies’ cover all NATO and EU member states with maritime forces designed for military operations. Defence policies and military arrangements of the states under discussion are informed by several normative factors: these include different levels of geostrategic freedom of action, political outlook, threat perception, different institutional affiliations (i.e. NATO/EU or both). Furthermore, naval power includes economic strength, geographic position, technical prowess and sociopolitical culture. At the same time, they are subject to the similar external pressures and challenges, in turn creating a set of shared conundrums and dilemmas discussed here. See Stöhs, *How High?*, 24.

and prevailing in a military conflict.³ The first challenge concerns the threat posed by the proliferation of advanced sensors and the *missile gap* allied navies suffer vis-à-vis possible adversaries. Secondly, the chapter explores the operational challenges that the introduction of novel and disruptive technologies create for second-tier navies, as they prepare to conduct operations across all domains within highly contested areas of the maritime space. Thirdly, many threats and challenges are emerging below the threshold of armed conflict. They require maritime forces to conduct myriad missions in the contexts of grey zone warfare as well as maritime security and safety.

At the same time, several important opportunities arise that could allow allied navies to close capability gaps, stay in the wake of greater powers, and thus successfully defend shared interests and security. This includes taking advantage of a more stable financial environment to reverse the downward drift of naval forces, utilising technology to reach capability thresholds and capitalising on the abilities of military personnel. Finally, the author argues that, in order to make the most of these opportunities and meet the many challenges ahead, allied states must conceptualise and promulgate strategies pertaining to the maritime domain and the use of naval forces.

The Return of Great Power Competition

Today's international order remains in upheaval. The rise of China and re-emergence of Russia as powerful military actors and their efforts to reshape the world according to their own visions have placed increasing pressure on the global security framework created under the aegis of the United States.⁴ In response, the US is seeking to deter and—if that fails—

3 The concept of winning interstate conflict still receives too little attention. Important contributions include Fiona S. Cunningham, "The Maritime Rung on the Escalation Ladder: Naval Blockades in a US-China Conflict", in *Security Studies in a New Era of Maritime Competition*, vol. 28, No. 4, (2020), 730–768; and Joachim Krause, "How do wars end? A strategic perspective", *Journal for Strategic Studies*, vol. 42., No. 7, (2019), 920–945.

4 "The institutions, regimes, and practices of this system, many of which—such as the Bretton Woods accords—were developed by the United States and its key allies during and shortly after the Second World War, were designed to privilege U.S. interests and those of its key security and economic partners." Peter D. Haynes, *Toward a New Maritime Strategy: American Thinking in the Post-Cold War Era* (Annapolis MD: Naval Institute Press, 2015), 2.

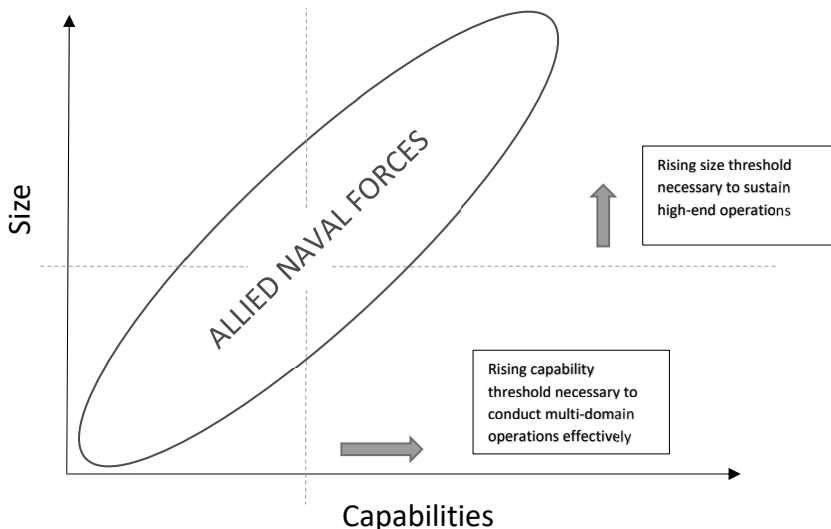
win possible high-end conflicts against peer and near-peer competitors. The return of strategic competition between great powers and the corresponding investment in high-end military capabilities creates new perils and challenges for lesser powers, not least the United States' transatlantic allies. It increases the pressure on the states under discussion to reach and pass quickly rising capability thresholds and to close expanding capability gaps.

Great power competition is clearly visible in the increasingly contested maritime domain. Within this competitive environment, the *raison d'être* of naval forces is "largely based on the maintenance and development of traditional warfighting capabilities against possible adversaries", Geoffrey Till explains.⁵ Consequently, the smaller maritime forces on both sides of the Atlantic face the challenge of staying in the wake of the US Navy and its sister services and to develop the ability to hold their own in high-end military operations across all domains as part of joint and multinational forces.⁶

5 Geoffrey Till. "Small Navies in the Current Strategic Context." In *Europe, Small Navies and Maritime Security*, edited by McCabe, Sanders and Speller, (Abingdon: Routledge, 2019), 16.

6 As Christopher Martin stresses, "like all navies, whether friends or opponents of the USN, [the services under discussion construct their] naval policy with the overwhelming dominance of the USN as a crucial influence". Christopher Martin, *The UK as a Medium Maritime Power in the 21st Century: Logistics for Influence*, (London: Palgrave Macmillan, 2016), 62.

Figure 1: *Rising Thresholds*⁷



Greater Power Competition and High-End Challenges

In seeking to deter armed conflict, NATO and EU member states must prepare to engage advanced adversaries in highly contested environments with little to no warning time. From the outset of possible hostilities, their forces must expect to conduct so-called ‘multi-domain operations’ in various theatres: within Europe’s maritime approaches to the High North and across the Atlantic Ocean; and from the shallow and confined littorals of the Persian Gulf all the way to the Indo-Pacific and the South China Sea.

From a US perspective, the concept of multi-domain operations can be understood as deploying military formations “that possess the capacity, endurance and capability to access and employ capabilities across all domains [land, air, sea, space, and cyber] to pose multiple and compounding dilemmas on the adversary”.⁸ In light of potential adversaries’ military capacities, it is not conceivable that the armed forces of any state under discussion,

⁷ Illustration based on Stöhs, *How-High?*, 25.

⁸ US Department of the Army, *The U.S. Army in Multi-Domain Operations*, TRADOC Pamphlet 525-3- (2018), iii. https://www.tradoc.army.mil/Portals/14/Documents/MDO/TP525-3-1_30Nov2018.pdf.

much rather a single service could effectively prevail in such a contest. Instead, these formations must be part of a joint and multinational campaign aimed at degrading the adversaries' strike forces and rolling back their battle networks, frequently referred to as anti-access/area denial (A2/AD) systems.⁹

The New Missile Gap

One particular challenge allied naval services face is a growing number of advanced missiles fielded by potential adversaries. China, Russia, Iran and North Korea are investing heavily in advanced missile technology and are readily supplying missiles to proxies and non-state actors. This allows them to strike targets at increasing range, with greater precision and at higher speed—placing at risk key assets of allied military forces, such as major command-and-control facilities, logistical hubs, airbases and large military platforms such as warships.¹⁰ They effectively limit their opponents' access to broad swathes of ocean space and restrict the latter's freedom of manoeuvre within an area of operation.¹¹

The proliferation of long-range joint fires—including hypersonic missiles—pose major challenges to allied naval forces. It highlights the vulnerability of capital ships and reveals the lack of defensive and offensive capabilities among Western navies.¹² Without a substantial US naval presence in a contested area (be it the European littorals, the Persian Gulf or the Asia-Pacific region) allied navies would suffer from a *missile gap*.

Unlike the perceived missile gap vis-à-vis the Soviet Union of the 1950s and 1960s, there is ample evidence that the small and medium-sized allied

9 Sam Tangredi, *Anti-Access Warfare: Countering A2/AD strategies*, (Annapolis MD: Naval Institute Press, 2013). For a critical assessment of Russia purported A2/AD networks see Michael Kofman, "It's Time to Talk A2/AD: Rethinking the Russian Military Challenge", *War on the Rocks*, 5 September, (2019). <https://warontherocks.com/2019/09/its-time-to-talk-about-a2-ad-rethinking-the-russian-military-challenge/>.

10 Justin Bronk interviewed in "What's Going on with Hypersonics? We Ask the Royal United Services Institute's Justin Bronk," *Hush-Kit*, 3 April, 2020. <https://hushkit.net/2020/04/03/whats-going-on-with-hypersonics-we-ask-the-royal-united-services-institutes-justin-bronk/>.

11 Tangredi, *Access*, 32f.

12 Richard Weitz, "Managing Multi-Domain and Hypersonic Threats to NATO," *International Centre for Defence and Security*, 24 April, 2020. <https://icds.ee/managing-multi-domain-and-hypersonic-threats-to-nato/>.

navies under discussion are outmatched in terms of firepower by both Russia and China. They lack so-called Battle Force Missiles (BFM) along with the necessary naval platforms, i.e. large surface combatants and submarines fitted with vertical launch systems (VLS), to counter this challenge.¹³ As Figure 2 illustrates, all allied navies possess only around 2,600 VLS cells. Nearly half of the navies in Europe, including some *front-line* states, altogether lack VLS tubes. By comparison, the Russian fleet alone has more than 3,000 BFM, the number of BFM belonging to the Chinese Navy has likely passed 6,000, while the US Navy possesses in excess of 9,000 VLS cells and an even greater number of BFM,¹⁴ not counting air-based and land-based missile systems. This fact throws into stark relief the deficient capability of navies to defend other elements of joint forces against missile barrages. Moreover, it undermines their ability to deter adversaries through denial.¹⁵

13 Robert O. Work, “*To Take and Keep the Lead: A Naval Fleet Platform Architecture for Enduring*

Maritime Supremacy (Washington, D.C.: CSBA, 2005), 90. Footnote

309. “[B]attle force missiles are missiles that contribute to battle force missions such as area and local air defense, anti-surface warfare, and anti-submarine warfare. Terminal defense SAMs, which protect only the host ship, are not considered a battle force missile.” Newer systems blur the lines between terminal and local air defence missiles. Generally, BFM do not include shorter-range missiles such as Evolved Sea Sparrow, Aster 15, Crotale, Rolling Airframe Missile or Mistral.

14 Keith Patton, “Battle Force Missiles: The Measure of a Fleet,” Center for International Maritime Security, 24 April 2019. <http://cimsec.org/battle-force-missiles-the-measure-of-a-fleet/40138>.

15 Wayne P. Hughes Jr. and Robert P. Gurrer, *Fleet Tactics and Naval Operations*, 3rd edn (Annapolis, Naval Institute, 2018). On sea denial in the Asia-Pacific context, see Jonathan D. Caverley and Peter Dombrowski, “Cruising for a Bruising: Maritime Competition in an Anti-Access Age”, in *Security Studies in a New Era of Maritime Competition*, vol. 28, No. 4, (2020), 671–700.

Figure 2. Vertical Launch System Cells Allied Navies in 2021¹⁶

Country	Ship classes and approx. number of VLS cells	Total	'Strike Length' VLS cells for Sea-Launched Cruise Missiles (SLCM)
United Kingdom	6 × 48 (Type 45, Daring class) 13 × 32 (Type 23, Duke class)	704	- *Tomahawk cruise missile deployed on Trafalgar and Astute-class submarines
France	2 × 48 (Forbin class) 6 × 32 (Aquitaine class)	288	6 × 16 = 96 SLCM deployed on Aquitaine class
Spain	5 × 48 (Álvaro-de-Bazán class)	240	5 × 48 = 240 No SLCM
Denmark	2 × 36 (Absalon class) 3 × 56 (Iver Huitfeldt class)	240	3 × 32 = 96 No SLCM
Italy	2 × 48 (Andrea Doria class) 8 × 16 (Carlo Bergamini class)	224	No SLCM
Netherlands	4 × 40 (De Zeven Provinciën class) 2 × 16 (Karel Doorman class)	192	4 × 40 = 160 No SLCM
Canada	12 × 16 (Halifax class)	192	-
Germany	4 × 16 (Brandenburg class) 3 × 32 (Sachsen class)	160	3 × 32 = 96 No SLCM
Turkey	2 × 8 (Barbaros class) 2 × 16 (Salih Reis class) 4 × 8 (Gabya class)	80	-
Greece	4 × 16 (Hydra class)	64	-
Norway	3 × 8, 1 × 16 (Nansen class)	40	-
Belgium	2 × 16 (ex-Karel Doorman class)	32	-
Portugal	2 × 16 (ex-Karel Doorman class)	32	-
	Several navies in Europe, including those of 'front-line states', altogether lack the ability to deploy battle force missiles from vertical launch systems.	0	
Allied Navies total:		2500+	688
United States	68 × 90/96 (Arleigh Burke class) 22 × 122 (Ticonderoga class) 2 × 80 (Zumwalt class)	9000+	8700+ Arsenal of SLCM Not included are VLS and BFM on submarines.

16 Illustration from Stöhs, *How-High?*, 37. Finnish vessels are fitted with the South African Umkhonto Block 2 short-range SAM, launched from eight-cell VLS on its four Hamina-class FAC and two Hämeenmaa-class MW vessels. However, these missiles cannot be considered BFM.

At the same time, these navies also suffer from shortfalls in offensive missile capabilities. They do not possess the long-range strike capabilities necessary to effectively penetrate even modest battle networks (i.e. Iran's) without US assistance, not to speak of Russian and Chinese integrated and layered defences.¹⁷ Compared to the thousands of ship-launched cruise missiles in the US Navy's arsenal, only two allied navies (the UK's and France's) are fitted with a handful of long-range cruise missiles.¹⁸ Because this capability is expensive, technologically complex and politically highly sensitive, all other states have remained reluctant to acquire these long-range naval strike assets. They rather rely on the land-attack modes of a modest number of short-range ASM, thereby placing the launch platforms closer to harm. In sum, the current missile gap limits their ability to place enemy battle forces at risk and thus to deter through the threat of punishment.¹⁹

Search, Find and Deter

The proliferation of precision-guided munitions (including intermediate-range and hypersonic missiles) is one of the greatest concerns among allied defence planners. However, it is only part of a larger problem. Missiles are only as good as the network of sensors that provide targeting data.²⁰ It is therefore no surprise that great power competition has prompted massive investments in sensor and communication capabilities. By fusing together sensors and effectors—from the seabed to space, across sea, air, land and cyberspace, and along the electromagnetic spectrum—great powers are

17 Ben Barrie et al., "Defending Europe: Scenario-Based Capability Requirements for NATO's European Members," *IISS Research Papers*, 10 May, 2019.

18 "The Royal Navy operates the U.S.-designed Tomahawk and relies solely on its nuclear attack submarines for this role. Meanwhile, the French *Marine Nationale* is the only European navy currently capable of launching a small number of cruise missiles from carrier-based Rafale combat aircraft as well as *Aquitaine*-class frigates; the latter have a maximum capacity of merely sixteen Naval Cruise Missile stand-off weapons. Stöhs, *How-High?*, 39.

19 Michael J. Mazarr, *Understanding Deterrence*, Santa Monica: RAND (2018). https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE295/RAND_PE295.pdf.

20 "The issue is really still whether the command system which fires the missile has some way of knowing what the situation is well beyond the horizon". Norman Friedman, "Technological Review: Shipboard Anti-ship Missiles," in *World Naval Review 2017*, ed. Conrad Waters (Barnsley: Seaforth Publishing, 2016), 179.

seeking to enhance their battle command architectures, establish networked forces and thereby gain the upper hand in a possible conflict in the future.

To this end, states are heavily investing in novel technologies that could potentially revolutionise warfare. It is believed that, by leveraging these new ‘game changing’ and ‘disruptive technologies’, including artificial intelligence (AI)-enhanced and increasingly autonomous systems and platforms, strategic competitors are seeking to render void the capabilities of the United States and its allies.²¹ These developments are placing compounding pressures on allied command and control, computers and communication (C4), intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capabilities.

In the maritime domain, great power competition and the ongoing technological (re-) evolution have created what Andrew F. Krepinevich calls a “mature precision-strike regime”.²² In such a regime, sea control is difficult to obtain, due to the ability of competing powers to “scout and effectively engage [enemy forces] at extended ranges”.²³ In the future, winning the initial phase of a conflict, the ‘hider-finder’ or scouting campaign, “will prove crucial [...] to accomplish[ing] key missions at and from the sea”.²⁴ More credible information arrangements are pivotal in preventing medium and small navies from becoming moribund in the opening stages of a quickly evolving crisis with peer or near-peer competitors.

Allied and partner nations will need to (a) improve sharing data across the network of sensors, platforms and formations; (b) establish a more comprehensively recognised maritime picture; (c) gain a higher degree of cross-domain awareness; (d) provide consistent intelligence, surveillance, targeting acquisition and reconnaissance; and (e) direct and control military measures against potential adversaries in contested environments. This

21 Ben FitzGerald, Kelly Sayler and Shawn Brimley, “Game Changers: Disruptive Technology and U.S. Defense Strategy,” *Center for a New American Security*, September 27, 2013.

<https://www.cnas.org/publications/reports/game-changers-disruptive-technology-and-u-s-defense-strategy>.

22 Andrew F. Krepinevich, *Maritime Competition in a Mature Precision-Strike Regime* (Washington, DC: CSBA, 2015).

23 *ibid.*, 88.

24 The scouting campaign is the initial stage of a conflict in which adversaries seek to identify enemy forces quickly in order to target them with their strike forces. *ibid.*, 5, 109f.

would allow them to “deter by detection”,²⁵ thereby reducing the risk of a surprise attack and limiting the first-mover advantage in the opening stages of a conflict.

However, many of the maritime forces under discussion suffer from severe shortcomings in their ability to conduct and contribute to complex military operations. The deficiency of command-and-control and ISTAR capabilities is particularly pronounced among navies that have suffered from disproportionate downsizing relative to their (national and international) security obligations over the past few decades. The smallest forces under scrutiny, including several in immediate proximity to Russia’s battle network, lack a critical mass of advanced sensors, weapons and platforms that would allow them to reach capability thresholds to contribute to multi-domain operations.²⁶

As the United States pushes towards the concept of multi-domain operations and competes with its strategic rivals to utilise disruptive technologies, allies and partners are struggling to follow suit. They face challenges aplenty to establish the C4ISTAR capabilities required to co-ordinate, integrate and interoperate effectively across all the domains of conflict.²⁷

Great Power Competition and Low-End Challenges

While technological and operational challenges at the high end warrant immediate responses, allied defence planners must address threats that run the gamut of the conflict spectrum. Besides challenging their opponents symmetrically, Russia, China and their proxies are employing complex, hy-

25 Thomas G. Mahnken, Travis Sharp and Grace B. Kim, *Deterrence by Detection: A Key Role for Unmanned Aircraft Systems in Great Power Competition*, Washington D.C., CSBA (2020).

26 Thomas Durell Young NATO’s Selective Sea Blindness: Assessing the Alliance’s New Navies,” *Naval War College Review* 72, No. 3 (2019), 21–32. Deborah Sanders, *Maritime Power in the Black Sea* (Abingdon: Routledge, 2014).

27 William A. Perkins and Andrea Olivieri, “On Multi-Domain Operation: Is NATO Today Sufficiently ‘Joint’ to Begin Discussions Regarding Multi-Domain Command and Control?,” *The Journal of the JAPCC* 26 Spring/Summer 2018). There are no alternatives to the NATO command structures. In fact, a recent IISS study concluded that “it does not seem feasible at this point for Europeans to attempt to run demanding operations”. Barrie et al., “Defending Europe,” 3.

brid forms of warfare to achieve strategic aims.²⁸ Among this “fused mix of conventional weapons, irregular tactics, terrorism and criminal behavior in the battlespace”²⁹, most actions take place below the threshold of conventional warfare, in the so-called *grey zone*.³⁰ The maritime domain offers plentiful opportunities to engage in activities short of armed conflict. This includes the clandestine tapping of underwater cables, covert intrusions into territorial waters and using law as a weapon of war (lawfare).³¹ Maritime forces have an important part to play in countering hybrid strategies aimed at undermining transatlantic cohesion and international rules and norms.

Beyond the grey zone, constabulary duties and naval diplomacy have become an integral part of nearly all navies under discussion. They are crucial in providing security and prosperity for the transatlantic nations: from protecting sovereign interests in the exclusive economic zones to addressing common maritime security challenges across the high seas. By ensuring freedom of navigation and upholding good order at sea, navies buttress “an open and fair international economic system and sustainable access to the global commons”.³² As they represent flexible instruments in the foreign policy toolkit of many seafaring states, maritime forces can prevent and manage crises and their spillover effects.³³

Despite an increasing need to meet high-end challenges, there will likely be no decrease in the demand for low-end operations. Rather, allied navies

28 Martin Murphy, Frank Hoffman and Gary Schaub, “Hybrid Maritime Warfare and the Baltic Sea Region,” Centre of Military Studies Report, 1 November, 2016, 3.

29 Joseph S. Nye Jr. in *The Future of Power: Its Changing Nature and Use in the Twenty-First Century*. Quoted in *ibid*.

30 “The definition of gray zone conflicts remains both expansive and elusive”, Frank Hoffman explains. See Frank Hoffman, “Examining complex forms of Conflict: Gray Zone and Hybrid Challenges,” PRISM / National Defense University, 8 November, 2018. <https://cco.ndu.edu/News/Article/1680696/examining-complex-forms-of-conflict-gray-zone-and-hybrid-challenges/>.

31 Lawfare can be understood as shaping the legal context to gain legal superiority over an adversary. It is aimed at achieving “kinetic objectives, degrading the enemy’s will to fight, and shaping the narrative of war through legal strategies”. Jill I. Goldenziel, “Law as a Battlefield: The U.S., China, and Global Escalation of Lawfare”, in *Cornell Law Review*, vol. 106, 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3525442.

32 European Union External Action Service, *Global Strategy for the European Union’s Foreign and Security Policy: Shared Vision, Common Action: A Stronger Europe* (European Union External Action Service, 2016), 8.

33 Geoffrey Till, *Seapower: A Guide for the Twenty-First Century* (Abingdon: Routledge, 2013), 34f.

must prepare to cover a broad range of naval tasks and missions; for even the most benign environment can turn hostile at a moment's notice. Hence, a critical mass of capacities that ensure "endurance and staying power" will be essential for maritime forces to ensure maritime security, counter hostile activities in the grey zone as well as deter and win armed conflict.³⁴

Opportunities

Despite the mounting challenges described above, several important trends and corresponding opportunities might allow small and medium-sized navies to successfully navigate the dangerous waters of looming challenges in the maritime domain.

Reversing the Downward Drift

It appears that the downward drift of naval capabilities, which lasted for more than two decades, has been arrested and is being reversed.³⁵ In fact, at the latest since the annexation of the Crimea and the War in Ukraine, NATO and EU members appear to have come to terms with the fact that the post-Cold War 'honeymoon period' is over. More resources are again being allocated to national and collective security and defence. 2015 marked the first time in more than two decades that Europe's cumulative total defence expenditure increased;³⁶ and several NATO members are fulfilling their pledge to spend two per cent of their gross domestic product (GDP) on defence.

Admittedly, several important qualifiers raise doubts about whether the overall upward trend of the past several years will be sustainable in the long run: For one, the defence expenditure of important allied nations (such as Spain, Greece and the Netherlands) has remained largely stagnant

34 Niklas Granholm, "Small Navies and Naval Warfare in the Baltic Sea Region," in McCabe, Sanders, Speller, *Europe, Small Navies and Maritime Security*, 81.

35 Jeremy Stöhs, "Into the Abyss? European Naval Power in the Post-Cold War Era," *Naval War College Review*, 71 No. 3 <https://digital-commons.usnwc.edu/nwc-review/vol71/iss3/4/>.

36 For more information see Alessandro Marrone, Olivier de France and Daniele Fattibene. 2016. Defence Budgets and Cooperation in Europe: Developments, Trends and Drivers: Istituto Affari Internazionali, 2016.

for more than a decade, complicating efforts to effectively revitalise naval forces.³⁷ Moreover, as economies lie dormant and large stimulus packages require financing, the COVID-19 pandemic is casting dark clouds over military modernisation.³⁸

Somewhat surprisingly, despite the current crisis, several governments have signalled their continued willingness to go forward with (and expand) their planned military investments.³⁹ Post-EU Britain (while cutting the size of its army) has announced its largest increase in military investments since the Cold War; Sweden is committed to increasing defence spending by up to 40% over the coming years; while Turkey's total defence spending has nearly doubled since 2010. Currently, there are no indications that allied maritime forces face reductions of a similar magnitude as those during the 1990s and 2000s.⁴⁰

Despite their constant lamentations at having too few resources, it appears likely that military leaders and defence officials will enjoy a far more

37 Spain is a case in point, with defence expenditure remaining stagnant for more than a decade (hovering around 1.2% of GDP). Whether the *Armada Española* will be able to continue operating fixed-wing aircraft from its carrier or to successfully revitalise its submarine flotilla remains questionable. Similarly, the Royal Netherlands Navy and Deutsche Marine are struggling to increase their readiness and to modernise their fleets due to financial constraints, structural deficiencies and flawed procurement processes. Netherlands defence spending has largely remained stagnant, stalling important modernisation projects (e.g. a new class of submarines) or the addition of vital assets (maritime patrol aircraft). Germany's malaise regarding the procurement of new surface combatants (F-125 Baden Württemberg), the NH90 helicopter and maintenance are well documented.

38 A study in 2016 warned there was "no hard evidence that the upward trend [among European navies is] going to endure [or that states will] spend their money better or with more intra-European cooperation than before". Marrone *et al.* 2016, 3.

39 Andrew Chuter, "UK to boost defense budget by \$21.9 billion. Here's who benefits – and loses out," *DefenseNews*, 19 November, 2020. <https://www.defensenews.com/global/europe/2020/11/19/uk-to-boost-defense-budget-by-219-billion-heres-who-benefits-and-loses-out/>; "Sweden embarks on its largest military build-up for decades," *The Economist*, 24 October, 2020. <https://www.economist.com/europe/2020/10/19/sweden-embarks-on-its-largest-military-build-up-for-decades>. Turkey's spending has increased from 11bn USD to 22bn. *Stockholm International Peace Research Institute*. SIPRI Military Expenditure Database, 1949–2019. <https://www.sipri.org/databases/milex>.

40 Not least because this would effectively strip several states from naval capabilities altogether. See Jeremy Stöhs, *Decline of European Naval Power: Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty*, (Annapolis MD: Naval Institute Press, 2018).

favourable financial environment than their predecessors. This allows them to conduct long-term planning (something quite unfamiliar to several states), draft and implement policies, and thus to address the challenges that lie ahead more effectively.

Riding the Wave of Technological Innovation

Advancements in technology offer allied nations significant opportunities to close capability gaps vis-à-vis their competitors. From a conceptual and technological standpoint, the transatlantic community of states appears to be in an encouraging position to develop and apply innovative and potentially disruptive technologies to their maritime forces. Their defence industrial base—although largely adjusted to peacetime requirements—is able to provide fleets with state-of-the-art technology.⁴¹

On a multi-, mini- and bilateral level, initiatives have been called to life that focus on applying disruptive novel technologies in the maritime domain.⁴² Autonomous systems, ISTAR sensor networks, cyber-capabilities and high-power lasers have the potential to outflank the quantitate dilemma many smaller navies face when up against larger adversaries. They offer much-needed redundancies, augment and increase the respective warfighting potential, and provide navies an opportunity to explore asymmetric avenues to address high-end security challenges. Off-the-shelf technology can deliver relatively cheap force multipliers for smaller and financially challenged maritime forces. They allow services (and allied forces in general) to overcome legacy thinking centred on large platforms (warships) rather than on weapons and sensors and, in turn, create the basis for more credi-

41 From sonars, radars, and electronic countermeasures to naval guns, advanced missiles, marine propulsion, and complex combat systems. A particular focus is placed on underwater capabilities, including submarines and mine countermeasures.

42 NATO has launched the Maritime Unmanned Systems Initiative to enhance the Alliance's capabilities, particularly in the areas of anti-submarine warfare and mine countermeasures. Three projects of the EU's Permanent Structure Co-operation (PESCO) aim to achieve similar effects. European Union, "PESCO Projects: Maritime Unmanned Anti-Submarine System (MUSAS)". <https://pesco.europa.eu/project/maritime-unmanned-anti-submarine-system-musas/>. The OCEAN2020 project, financed by the European Union's Preparatory Action on Defence Research, seeks to enhance 'situational awareness in a maritime environment'. See Stöhs, *How High?*, 47.

ble sea-denial capabilities.⁴³ By delegating the use of AI and autonomous systems and disruptive technologies to lower-level commanders, allied navies could exploit the potential of disruptive technologies more quickly and to a greater degree than their competitors with their highly rigid and inflexible, top-down command structures.⁴⁴

Finally, the rising cost of building and maintaining maritime forces coupled with still most defence spending across allied states creates the need for economies of scale. States are forced to bond together with and draw from each other's industrial capacity to avoid techflation, i.e. the rising costs of new equipment that exceed inflation and the consequent increase in per-unit costs due to the relatively small numbers being procured.⁴⁵

Recent consolidation in the shipbuilding sector, such as the fusion of the German shipbuilders or the merger between the French Naval Group and the Italian Fincantieri (Naviris), are indicative of this process.⁴⁶ In the future, a more cooperative and consolidated defence industrial base across allied nations could avoid wasteful offset agreements, prolonged tenders and competition, and deliver more *bang for the buck*.

43 According to one view, currently, these “navies are deficient in building integrated capabilities, ensuring common operating procedures, projecting battlespace awareness, and accomplishing interoperability in all maritime combat domains.” Thomas-Durell Young, “NATO’s Selective Sea Blindness: Assessing the Alliance’s New Navies,” *Naval War College Review* 72, No. 3 (2019), 13.

44 Decentralised decision-making is germane to the Western approach to warfare.

45 “The global increase in warfighting capabilities throws into stark relief the comparatively small defense budgets and modest industrial capacities from which [individual navies] can draw as they modernize. Consequently, they suffer disproportionately from techflation and diseconomies of scale; which, in turn, creates even greater dependencies on foreign training, support, and technological assistance. [...] This adds credence to worries that small- and medium-sized states are nearing the ‘end of the line’ regarding naval modernization and the ability to afford the next generation of military technology.” Stöhs, *How High?*, 70, 73.

46 Sabine Siebold, Tom Käckenhoff, Jan Schwartz, “Konsolidierung im Marine-Schiffbau nimmt Fahrt auf,” *www.reuters.com*, 14 May, 2020. <https://www.reuters.com/article/deutschland-werften-luerssen-german-nava-idDEKBN22Q1UQ>.

Personnel—A Nation's Best and Brightest.

In tackling future challenges, arguably the greatest resource for any navy is its people, for Alfred T. Mahan's words still hold true: "Historically, good men with poor ships are better than poor men with good ships."⁴⁷

As navies again seek to regain their capacity to conduct complex maritime missions after years of downscaling, the dearth of qualified personnel has become a most troubling issue. Recruitment and retention problems have beset several navies and have largely contributed to a lack of readiness among Europe's premier navies.⁴⁸ As Anders Puck Nielsen points out, the smaller the pool of naval professionals becomes, the more difficult it is to balance between sailors' various sea and shore deployments and to maintain high-standards of training.⁴⁹ What is more, the smaller the navy, the more difficult it is to "produce leaders who have the credibility to give advice at the national level on what naval forces are capable of providing", Thomas D. Young adds.⁵⁰

Despite these problems, the majority of allied sailors, airmen and marines are well educated, highly professional and dedicated individuals. Through shared membership in NATO and the EU, they are regularly assigned to a range of duties and positions in different international contexts. The fleets frequently undergo training to the highest of standards, such as damage control in Neustadt, Germany or Fleet Operational Sea Training in the UK. As part of NATO's Standing Maritime Groups and recurring naval exercises (e.g. Dynamic Mongoose/Manta) they seek to improve interoperability and hone their skills in complex operational environments.

While there is no instant cure for personnel shortages (it takes decades to grow a cadre of naval professionals and leaders), there is a silver lining

47 Alfred T. Mahan 2013. *The Influence of Sea Power Upon the French Revolution and Empire, 1793–1812*. (Berlin: Europäischer Hochschulverlag, 2013), 102.

48 Has the Royal Navy solved its manpower problems? *Navy Lookout*, 18 March, 2018. <https://www.navylookout.com/has-the-royal-navy-solved-its-manpower-problems/>. Laurant Lagneau, "La Marine nationale a des difficultés pour recruter, ce qui met certaines spécialités sous grosse tension," *zone militaire opex360*, 1 November, 2019. <http://www.opex360.com/2019/11/01/la-marine-nationale-a-des-difficultes-pour-recruter-ce-qui-met-certaines-specialites-sous-grosse-tension/>.

49 Anders Puck Nielsen, "Why Small Navies Prefer Warfighting over Counter-Piracy," in Edward R. Lucas et al. (eds.), *Maritime Security: Counter-Terrorism Lessons from Maritime Piracy and Narcotics Interdiction* (Amsterdam, IOS Press, 2020), 97–109.

50 Young, "Blindness", 15.

for allied naval forces. Armed forces are revisiting their recruitment models and are running innovative advertising campaigns to reach out to and gain interest among a broader audience.⁵¹ Paired with better pay, improving conditions of service (e.g. new crewing concepts alongside greater habitability on warships) and people instilled with greater sense of urgency and purpose, allied navies are likely to attract, retain and draw from some of the nations' best and brightest.

Challenges, Opportunities and Allied Maritime Strategies

This article has shown that allied navies face significant challenges. Strategic competition between the United States, China and Russia has led to a global increase in high-end warfighting capabilities. The proliferation of advanced missiles, sensors and potentially disruptive military technologies has created new perils for the small and medium-sized navies on both sides of the Atlantic. In order to contribute effectively to joint, multi-domain operations in increasingly contested environments, they must improve their offensive and defensive potential and greatly enhance both their command-and-control and ISTAR structures. In addition, navies must address persistent threats and challenges below the threshold of armed conflict—in the grey zone of strategic competition as well as across the field of maritime security and safety.

Importantly, the current environment also offers allied navies several promising opportunities to successfully tackle the daunting challenges that lie ahead. Having arrested their downward drift, allied navies are seeking to revitalise their warfighting capabilities with the help of novel technologies and increasingly professional forces. For these efforts to succeed, they need to be coordinated with allies and partner states—from the tactical level to the strategic level. Accordingly, naval leaders, defence planners and their political masters must constantly rethink the role of maritime forces and readjust their policies.

The best way to understand the manifold roles of naval forces is to draft and disseminate strategies.⁵² This is particularly true for the small and medium-sized states under discussion: “The exercise of a nation thinking

51 Social media plays an important role in this and many military forces are increasingly using professional and innovative ways of reaching out to and gaining the interest of young citizens.

52 The Kiel International Seapower Symposia were intended specifically to bring together leaders from across the globe and to foster these kinds of mental exercises.

about its maritime situation, the threat thereto and the importance of the maritime domain to the national economy and security, and verbalising how it wants to preserve this key national attribute into the future will focus government and public discourse,” William Combes explains.⁵³ In the past, some of these “thought exercises” have failed to assess the strategic environment correctly (*A Cooperative Strategy for 21st Century Seapower*)⁵⁴ or lacked the necessary “means” and “ways” to achieve the desired “ends” (*EU Maritime Security Strategy*).⁵⁵ Others have suffered from political myopia and institutional neglect (Poland and Germany)⁵⁶ or were not made publicly available in the first place (Greece)⁵⁷—thus failing to explain to the population why (in times of peace) vast sums of money were being spent on naval forces.

In the future, the failure to adequately identify and address challenges could have far-reaching ramifications for the security and prosperity of allied nations. Naval and maritime strategies must accurately gauge the characteristics of the challenges ahead and clearly state their level of ambition in order to derive an understanding of the required capabilities as well as explain this to the public. They should plan explicitly for higher-end capa-

It was a great pleasure to develop the content of the conference series together with the team at the ISPK's Center for Maritime Strategy & Security and share the floor with distinguished experts. The author hopes that the ideas developed at KISS will, in one way or another, influence and inform the allied maritime strategies of the future. The author would like to thank Sebastian Bruns, Johannes Peters, Julian Pawlak, Adrian Neumann, Randy Papadopoulos, the team at ISPK as well as everybody who contributed to the success of the conferences over the past years. <https://www.kielseapowerseries.com/en/>.

- 53 William Combes, “Maritime Security Strategies for Very Small States: The Baltic States,” in *Europe, Small Navies and Maritime Security*, ed. McCabe, Sanders, Speller, 128.
- 54 Bryan McGrath interviewed by Cdr. Salamander: “Episode 575: The Navy’s Problems and a Plan to Fix Them, with Bryan McGrath,” *Midrats*, 10 January 2021. <https://www.eaglespeak.us/2021/01/on-midrats-10-january-2021-episode-575.html>.
- 55 Brendan Flynn, “The EU’s Maritime Security Strategy: A Neo-Medieval Perspective on the Limits of Soft Security?” *Croatian International Relations Review* 22, No. 75, 2019.
- 56 The evolution of recent maritime strategic thinking and processes of drafting maritime and naval strategy in Germany and Poland respectively is described by Sebastian Bruns and Andrzej Makowski in: Sebastian Bruns and Sarandis Papadopoulos (eds.), *Conceptualizing Maritime & Naval Strategy*, (Baden-Baden: Nomos, 2020).
- 57 In the absence of official publications by the Greek government and Ministry of Defence, one must turn to other sources such as statements by high-ranking defence officials to infer the strategic rationale of the Greek navy.

bility profiles, and link naval concepts and planning to corresponding modernisation and procurement programmes.⁵⁸ However, they must not forget to include a maritime focus and emphasise the need for full-spectrum capabilities that leverage the constabulary and diplomatic functions of maritime forces.

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58 For more detailed recommendations see Stöhs, *How High?*, 71.

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Naval Warfare 4.0: Joint and Combined, Manned or Unmanned—What Shapes the Future?

Tom Guy

“History does not repeat itself, but it does rhyme.”—Mark Twain

Introduction

Predicting the future of warfare has always been both a necessary and precarious undertaking. Today, the rate of change in our world is accelerating, driven by technological advances, exacerbating the challenges of trying to envisage the future of warfare. Nevertheless, whilst making predictions may be fraught with risk, some assessment of the future is vital, as alliances, states and non-state actors inevitably strive to gain or maintain relative advantage and develop the necessary strategy to do so. The intent here is to ask, from an alliance perspective, what shapes the future of maritime warfare?

In assessing the future, we must start at the present: Within a decade, the current focus on ‘Great Power Competition’¹ may well have been supplanted by a global collective endeavour to combat the effects and causes of climate change, or by the forecast of an approaching asteroid that may cause a new era of global extinction. However, we could also be fighting over the second-order consequences of one nation’s cloud seeding; prudent military planning dictates that as long as NATO wishes to preserve the values by which its members live, perpetuating military advantage for the foreseeable future will drive strategy.

1 The renewal of Great Power Competition with Russia and increasingly China, challenging US-led Western dominance, was acknowledged in the Obama Administration’s 2015 National Military Strategy and was placed at the centre of the Trump Administration’s 2017 National Security Strategy and 2018 National Defense Strategy. See: O’Rourke, Ronald, “Renewed Great power Competition: Implications for Defense—Issues for Congress”, *Congressional Research Service Reports*, Updated 27 January 2021, <https://crsreports.congress.gov/product/pdf/R/R43838>.

As the alliance looks ahead, it sees increasing challenges to this military advantage; discussion about Great Power Competition is realistic and necessary, but not overly optimistic or over-confident. Whilst this narrative of *competition* drives dedication and energy in alliance planning and warfare development, it does not drive the same political imperative for extensive defence spending that would come with a strategic shock. Warfare development is perpetually an intimate balance of ends and means, with ambition driving, and curtailed by, available resources, with variables invariably politically driven. One of the most important factors, therefore, is always likely to be resources; the ‘guns or butter’ debate is perennial^{2[09]} and ‘economy of force’ will be an enduring principle of war.^{3[09]}

When we are shaping the next generation of maritime warfare, and strategy, there are innumerable developments to consider, ranging from climate change to human migration, and the cultural evolution associated with it, to emerging technology and what we seek to do with it. While climate change and geopolitics will undoubtedly fundamentally affect our lives over time, they will probably largely change *where* and *why* warfare is conducted. The most significant factors in *how* warfare is conducted will almost certainly be driven by technological developments. Three themes dominate the journey from here to tomorrow: Firstly, the transformation in information technology, the effects of which have already been extraordinary over the past few decades, appears likely only to accelerate and become magnified in the near future. Secondly, the exploitation of autonomy, or near autonomy on land, on and under the sea, and in the air will proliferate. In the near future, this will enable and demand that maritime commanders fight in very different ways. Thirdly, driven by these factors, notions of ‘jointness’, domains and Command and Control (C2) will continue their evolution, adapting to the emerging requirements and developing capabilities of future commanders and planners.⁴

2 The perpetual debate on the relative national priorities of defence and social spending, the phrase ‘guns or butter’ is generally attributed to WW1 US Secretary of State William Bryan. See: Feehery, John, “Guns and butter”, *The Hill*, 2 December 2009, <https://thehill.com/blogs/pundits-blog/economy-a-budget/70233-guns-and-butter>.

3 Of the nine Principles of War commonly taught to alliance militaries, ‘Economy of Force’ is generally intended to be applied at the operational or tactical level, but in this sense is proposed as a strategic consideration. See: JP 3-0, *Joint Operations*, 17 January 2017, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_0ch1.pdf?ver=2018-11-27-160457-910.

4 In allied doctrine, ‘Joint’ is defined as the “...activities, operations and organizations in which elements of at least two services participate.” ‘Combined’ indicates

The combined effect of these themes will radically change the battlefield of the future. However, there are limits. At the strategic level, artificial intelligence (AI), the exploitation of big data and machine learning will undoubtedly play an increasingly important role in determining objectives and plans.⁵ Even so, in the foreseeable future, it seems implausible that humans will abdicate major decision-making altogether, and from a moral perspective, *why* and *how* war will be conducted will ultimately be a human decision. In determining the *what*, *where* and *when* of the Command Estimate,⁶ planners will also increasingly harness augmented decision-making tools,⁷ but the Operational Commander will still be human. Nevertheless, having set the parameters for a morally acceptable conflict, and determined that the plan adheres to the principles of *Jus ad bellum*, the Operational Commander will undoubtedly rely upon increasingly autonomous capability to deliver effect that is *jus in bello*.⁸

the "...activities, operations and organizations in which elements of more than one nation participates." Allied doctrine defines five operational domains: land, sea, air, space and cyberspace. See: Donnelly, Jared and Farley, Jon, "Defining the Domain in Multi-Domain", *Joint Air and Space power Conference 2019, Shaping NATO for Multi-Domain Operations of the Future*, 8 October 2019, <https://www.japcc.org/defining-the-domain-in-multi-domain/>.

- 5 Artificial intelligence is generally used to denote the ability of a computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. Machine Learning is a branch of AI focused on building applications that learn from data and improve their accuracy over time without being programmed to do so. The term big data was formally recognised in 2013 to describe computing data of a very large size, typically to the extent that its manipulation and management present significant logistical challenges, or put simply, sets of information that are too large or complex to handle, analyse or use with standard methods. See: IBM Cloud Education, <https://www.ibm.com/cloud/learn/machine-learning>.
- 6 The conceptual framework for military planners, the 'Command Estimate' is a six-step iterative process defined in NATO doctrine.
- 7 Augmented decision-making uses automated analytics for the purpose of informing better, data-driven decisions. See: Burton, Jason, "Algorithms for Simpler Decision-Making (1 / 2): The Case for Cognitive Prosthetics", The Decision Lab, <https://thedecisionlab.com/insights/society/towards-augmented-decision-making-12/>.
- 8 *Jus ad bellum* describes the conditions under which states may resort to war or the use of armed forces in general. *Jus in bello* regulates the conduct of parties engaged in an armed conflict. See: International Committee of the Red Cross, "What are *jus ad bellum* and *jus in bello*?" 22 January 2015, <https://www.icrc.org/en/document/what-are-jus-ad-bellum-and-jus-bello-0>.

Information—challenge or opportunity?

It is perhaps one of the paradoxes of modern, and future, warfare that ever-improving awareness enabled by technology does not necessarily equate to greater clarity of what is actually going on. Whilst the manipulation of information at all levels, from the tactical feint to strategic misinformation, is nothing new, the ‘information age’ has fundamentally changed the importance of information management in the battle space and the Information Operations campaign. At the tactical and operational levels, stealth technology, electronic deception and cyber warfare all provide hitherto inconceivable variables on an ever more networked battlefield. With an ever-increasing reliance on the estimated 50 billion devices connected to the internet of things, and the continued evolution of the ‘infosphere’,⁹ the increase in flow of information is almost unimaginable, but the corollary to that is that the cyber domain is likely to be one of the most keenly contested battlefields of the future.¹⁰ At the strategic level, individuals’ connectivity and access to information globally has made *the narrative* a profoundly more potent weapon.¹¹ In the maritime domain, this ubiquitous connectivity will enable previously ‘out of sight and out of mind’ activity to play a greater role in the narrative. In the North Atlantic context, the ‘distant blockade’ of WW1¹² and the ‘wolf packs’ of WW2 both had a profound strategic effect,¹³ which was felt ultimately on land, but were conducted entirely out of sight of the general populace. Whilst one can only speculate how earlier commanders would have behaved, or would have been al-

9 For an in-depth analysis of NATO’s view on trends in this field, see Reding, D F and Eaton, J, “Science and Technology Trends 2020-2040”, *Exploring the S&T Edge*, NATO Science and Technology Organization, https://www.nato.int/nato_static_fl2014/assets/pdf/2020/4/pdf/190422-ST_Tech_Trends_Report_2020-2040.pdf.

10 Grigore, Neculai, “Naval Operations — C2 Cyber Protection of Maritime Unmanned Systems”, CJOs COE, Jan 2021, www.cjoscoe.org.

11 Klingova, Katarina and Milo, Daniel, “Countering Information War Lessons Learned from NATO and Partner Countries: Recommendations and Conclusions”, <https://www.globsec.org/publications/countering-information-war-lessons-learned-nato-partner-countries-recommendations-conclusions/>.

12 This Distant Blockade was the British blockade of the North Sea from 1914–1919, which sought to obstruct Germany’s ability to import goods. Janicki, David A. 2014, “The British Blockade During World War I: The Weapon of Deprivation”, *Inquiries Journal/Student Pulse* 6 (06), <http://www.inquiriesjournal.com/articles/899/the-british-blockade-during-world-war-i-the-weapon-of-deprivation>.

13 The term ‘wolf pack’ describes the tactic of coordinated submarine attacks on convoys.

lowed to behave, with greater (and more immediate) public scrutiny of their actions, there is no doubt that modern and future media will make *the presentation* of action at, over and from the sea more important than ever, and this must be a key factor in shaping future strategy.

Differing perspectives on international behaviour will continue to drive competing blocs to take contrasting approaches to shaping the balance of power. Hybrid, grey-zone or sub-threshold activity offers attractive opportunities for greater 'economy of force', precisely because it undercuts the norms and values of acceptable international relations.¹⁴ Given the principles on which the alliance is established, hybrid warfare will therefore continue to be something that NATO needs to counter, not wage. Command of the information space will be the ultimate aim on both sides, but even as the global order evolves, alliance strategy must start with the moral high ground as its vital terrain. With more 'kinetic' activity delegated to carefully orchestrated autonomous, or largely autonomous units, Commanders on both sides will focus proportionately more effort on 'out-messaging' the opponent.

It is not only the flow of information from the battle space to the populace that will continue to burgeon, but also the flow of information within and across the battle space. At the tactical and operational levels,¹⁵ Command and Control in a Denied or Degraded Environment (C2DE)¹⁶ will be one of the greatest challenges in the near future as technology-en-

14 Hicks, Kathleen H. et al., "By other means. Part 1: Campaigning in the Gray Zone", Center for Strategic and International Studies, July 2019, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/Hicks_GrayZone_interior_v4_FULL_WEB_0.pdf.

15 In alliance doctrine, the strategic level is the "...level at which a nation or group of nations determines national or multinational security objectives and deploys national, including military, resources to achieve them." The operational level is the "... level at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theatres or areas of operations." The tactical level is the "... level at which activities, battles and engagements are planned and executed to accomplish military objectives assigned to tactical level formations and units.", defined in *Allied Administrative Publication 6, NATO Glossary of Terms and Definitions*, Edition 2013, NATO Standardisation Agency, 2013, https://www.jcs.mil/Portals/36/Documents/Doctrine/Other_Pubs/aap6.pdf.

16 C2D2E is the 'exercise of authority and direction by a commander over assigned and attached forces, in the accomplishment of a mission, while access to and use of critical information, systems and services are reduced or prevented'. Defined in Joint Publication 3-32, *Command and Control for Joint Maritime Operations*, 8 August 2006, https://fas.org/irp/doddir/dod/jp3_32ch1.pdf.

abled high fidelity breeds reliance on data-rich information and centralised command and control. The current commander is already concerned with all aspects of warfare within his assigned geographical area ‘from the seabed to space’;¹⁷ the future commander will have both the capability and the requirement to manage ever greater levels of complexity at greater pace. On the one hand, this proliferation of information in the battle space will make analysis harder; on the other, machine learning and augmented decision-making will ameliorate this, making it simply an extension of the arms race, but in a different form: the ‘information race’. While the alliance quite rightly focuses on this challenge, it tends to view information as an enabler, but particularly in the context of the increasing need to counter ‘hybrid’ or ‘sub-threshold’ activity, its role as a disabler is equally powerful. In this context, distributed, networked unmanned systems in all domains could certainly provide ‘economy of force’ for the Maritime Commander both offensively and defensively.

The near-future maritime commander will have a battle space that is inextricably linked across the domains; assets and effects from other domains, including space and cyberspace, will influence the maritime environment, and the maritime commander will seek to influence events in the air, on land or in space, as well as at sea. Whilst that may not seem very unfamiliar, garnering, protecting and processing information across all domains faster and more effectively than the competitor will be the battle-winning edge of the near future. However, the need for resilience and the ‘fallback’ capability in a denied environment must be carefully considered as the evolution towards cyber-dependency continues.

Information management in all its forms will undoubtedly be at the heart of warfare development and planning across all domains. Nevertheless, future maritime warfare will not solely be in support of the information campaign. Whilst ultimately ‘the seat of purpose is on the land’,¹⁸ in a near-future conflict, the ‘vital ground’ of the maritime domain still seems likely to be vessels (increasingly autonomous) carrying vital cargoes, cables carrying vital data and pipelines carrying vital fuel. These ‘Strategic Lines of Communication’, will not only be of enduring importance to the military commander, but have enmeshed themselves in the existence of mod-

17 Vice Admiral Andrew L. Lewis, Commander US SECOND Fleet, quoted in Ackerman, Robert K, “Joint Force Takes on the New Ice Age”, *AFCEA Signal*, 16 October 2020, <https://www.afcea.org/content/joint-force-takes-new-ice-age>.

18 Wayne P. Hughes Jr, “Naval Operations: A close look at the operational level of war at sea” in *Naval War College Review* vol. 65, No. 3 (Summer 2012), <https://digital-commons.usnwc.edu/nwc-review/vol65/iss3/>.

ern society to the degree that they will be of truly great strategic value to regimes and populations at large. The battle to protect or degrade them will be a key element of future strategy.

Man and machine in perfect harmony?

It is no secret that harnessing autonomy is a top priority for NATO.¹⁹ The combination of the ability of more-or-less unmanned systems to do well what humans struggle to achieve, and the promise of achieving effect at the expense of fewer humans, both in terms of peacetime resources and cost of life in conflict, is simply too compelling to ignore. In the maritime environment, the challenges of locating ever quieter submarines is already driving a quest for autonomous, or near-autonomous, undersea vehicles, able to operate persistently at range with an increasing array of ever more sensitive sensors, augmented by AI.²⁰ While, as long as there are manned submarines, it seems likely that the principles of *jus in bello* will limit the degree to which targets are engaged without at least a person *on* the loop, if not *in* the loop,²¹ the opportunities for efficient and effective wide-area ASW are self-evident. In the defence of the extensive critical infrastructure in the maritime domain, UUVs in particular will be increasingly valuable in detecting and countering sub-threshold malign activity.²² In the same way that the air domain has now begun to embrace the use of unmanned systems more widely, remotely controlled or more or less autonomous vehicles, which are smaller, cheaper and able to be used in a broader opera-

19 Brussels Summit Declaration, issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Brussels 11–12 July 2018, *Press Release (2018) 074*, 11 July 2018, https://www.nato.int/cps/en/natohq/official_texts_156624.htm.

20 "Thirteen Allies to cooperate on the introduction of Maritime Unmanned Systems", *NATO Head Quarters Newsroom/News online*, 4 October 2018, https://www.nato.int/cps/en/natohq/news_158672.htm?selectedLocale=en.

21 Functions that have a *man-in-the-loop* require a positive affirmation from the human operator for the machine to proceed. In *Man-on-the-loop* functions, the operator need not approve of the machine's action beforehand but retains the ability to veto it before the execution, or abort once it has begun. *United States DoD Directive 3000.09: Autonomy in Weapon Systems*, Washington: DoD, 21 November 2012, pages 13–14, <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/300009p.pdf>.

22 For an example of this emerging technology see a description of the Boeing Orca XLUUV at: <https://www.naval-technology.com/projects/orca-xluuv/>.

tional risk envelope, are likely to proliferate at an increasing rate across the maritime domain, both in offensive and defensive roles. Whilst ultimately the ‘Q-Ships’ of WW1 really just accelerated the German embrace of unrestricted submarine warfare, tactically the concept was sound and there were some notable early successes.²³ As autonomy proliferates, ‘Q-Drones’, armed and lethal, but virtually impossible to distinguish from the innumerable delivery and surveillance drones, could confer a huge tactical advantage, at a relatively low cost, with no risk to life and without ceding moral superiority.

Even if evolutionary changes in species are generally measured over generations and millennia, there can be no denying that the pace of technological advances is forcing a rapid shift in human behaviour, and what might have been considered science fiction a few years ago is now a realistic prospect within the lifetimes of many of our sailors.²³ Wearable neurotechnologies are already here and offer extraordinary opportunities in efficiency and effectiveness in military applications.²⁴ This abundance of civilian innovation provides military thinkers with new ideas relatively cheaply, thus accelerating the pace of change. Persistent Intelligence, Surveillance and Reconnaissance (ISR), enabled by civilian space capabilities, autonomy, driven by manufacturing and commerce, and information supported by machine learning are all extraordinary opportunities that are already being seized and are shaping the current, as well as the next, generation of maritime warfare.

Ubiquitous ISR and exquisite analysis, advancing almost exponentially, has engendered an expectation of clarity and precision of information in the battle space. While this may be a dangerous mirage, targeting decisions rely increasingly on real-time imagery, both in terms of delivering effect and in meeting politically acceptable standards of collateral damage that are defensible on the world media stage. Coupled with this, greater levels of remote scrutiny have eroded previously held notions of ‘Mission Command’.²⁵ There is an irony here that as the human race strives to create greater autonomy in machines, it is, at the same time, reducing the au-

23 Yuval Noah Harari, “Homo Deus, A Brief History of Tomorrow” (Vintage, 2017).

24 “Six paths to the Nonsurgical Future of Brain-Machine Interfaces”, Defense Advanced Research Projects Agency, Outreach@Darpa.mil, 20 May 2019, <https://www.darpa.mil/news-events/2019-05-20>.

25 Mission Command is the principle of empowering subordinate decision-making and decentralised execution appropriate to the situation, defined in US Army Doctrine Publication No. 6 (ADP 6-0) Mission Command, 31 July 2019, https://fas.org/irp/doddir/army/adp6_0.pdf.

tonomy of our people. While it may be tempting to conclude that the days of Mission Command are truly behind us, made obsolete by technology, its importance as a concept endures: The commander of the future will apply the principles of mission command as he directs his team in setting the parameters for their autonomous aerial surveillance cordon or underwater search plan. They will already have determined whether to use manned, unmanned or selectively manned vehicles, and under what criteria. Locating and identifying an adversary will be achieved far better by machines; deciding what to do as a result will either be achieved through a pre-programmed algorithm within the autonomous system, or by a human being 'on the loop'. In either event, human presence in the battlefield will not be needed to deliver kinetic effect. The presence of a human being in a military unit will almost certainly be to deliver a specifically human effect, either for humanitarian reasons or in support of a particular narrative. There may well be a greater density of military hardware in the battle space, as machines that can fight, but do not need to protect or sustain humans, become cheaper and therefore more plentiful, but there will almost certainly be a far lower density of people directly in harm's way. This push-button violence at range makes maritime warfare a less personal affair. While the commander may be less cautious about committing to an action, in the knowledge that only treasure and not blood will be spilt, they will still need to consider the far-reaching effects of, for example, denying a wintry Northern Europe its entire supply of tanker-delivered liquefied natural gas.

Combined and Joint, Multi-Domain, Cross-Domain... or Domain-agnostic?

As technology, and connectivity in particular, should enable greater shared global awareness and therefore equality and unity, there is nevertheless, little to indicate that the world is becoming more peaceful. Equally, while one could extrapolate towards a global race, the human instinct to identify itself according to sub-divisions in race or nations appears to endure. However, whilst the maintenance of national identities seems inevitable, the advantages of alliance are also enduring. Returning to the initial point on 'economy of force', alliances have been a fact of warfare throughout history, and while they will morph, there does not appear anything to indicate that the concept will not endure for as long as the notion of nation statehood. So in the context of alliance strategy, 'combined' will continue to be an inherent feature of strategy. Nevertheless, the basic building block of defence continues to be the nation state, and while nations form alliances based on shared values and objectives, national interests invariably trump

alliance goals when it comes to developing and maintaining military capability. Yes, future warfare will be 'combined', but the eternal quest for alliance interoperability will continue, as nations balance their own internal drivers and resources with those of their allies' collective objectives in developing their forces and doctrine. Technology is likely to widen capability disparities and exacerbate interoperability challenges; allied strategy will need to effectively employ a broader technical range of capabilities.

Within nations, the division of forces into domain-orientated services is arguably simply a convenient way of carving up organisations into more manageable chunks better able to focus on a specific range of tasks. Whilst previous attempts to dilute single-service identities have not been successful, future forces will need to be, and be able to be, far more cognisant of what is going on across all domains.²⁶ Warfare at, and from, the sea is already an inherently multi-domain endeavour, and the effective maritime commander is instinctively 'joint' in outlook. As the combined effects of technological advances continue to enable seamless awareness and activity in, and affected by, space, the air, land, sea and cyber domains, future commanders will need to carefully harness available information and not only think in combined and joint terms, but evolve to be 'domain-agnostic' in their thinking.

Nevertheless, the physical differences between domains endure, and whilst *Homo sapiens* will continue to evolve, fundamentally our way of interacting within the domains will probably not change significantly in the near future. Continuing to define specifically 'Maritime' strategy, therefore has enduring utility. However, in the same way that the NATO Command Structure has evolved, i.e. that maritime strategy will be inherently subordinate to a geographically focused strategy, which defines activity across all domains, and in dealing with the 'maritime' domain, will be intrinsically linked to activity and factors in the others.

And so...

The maritime strategist of the future is likely to have to contend with a battle space that seems smaller, owing to continued advances in speed, range

26 Reilly, Jeffrey M., "Multidomain Operations: A Subtle but Significant Transition in Military Thought.", *Air and Space Power Journal*, vol. 30, issue 1, 1 March 2016, <https://www.airuniversity.af.edu/ASPJ/Display/Article/1152102/volume-30-issue-1-spring-2016/>.

and precision. But, at the same time, that battle space will be far denser, as sensors and information grow exponentially, reinforcing the interdependence between what happens under, on and over the sea, i.e. cross-domain. They will have to deal with the paradox of far greater access to information countered by a greater difficulty in discerning the truth; technology will not make the fog of war any less impenetrable. Seeing through this fog will not just be a challenge for the military commander, but also observers and political decision makers. Strategy will need to exploit technology in portraying maritime action, as the ubiquity of media drives the importance of *the narrative* ever further to the fore.

With so much exciting innovation proceeding at an ever increasing pace, it is tempting to think that warfare in the maritime domain will be unrecognisable in a few years, but, in the near future, without a significant strategic shock, humans will still want to be *on the loop* at least. The exploitation of information, at all levels and seamlessly across all domains, will be key. Efficiency, both physical and cognitive, will provide the battle-winning edge. Alliance Maritime Strategy will need to define the fundamentals of extensive manned and unmanned networks of sensors and shooters, and apply those to the geography of the NATO area of influence, in a way which ensures that what happens in the maritime domain seamlessly supports, and is supported by, what happens in all other domains. The fundamental challenge for future maritime strategy is the same as it has always been: adopting and adapting the latest tools and techniques to deal with emerging challenges. Inherent in this is the need to balance the ability to exploit new and exquisite technical capabilities with retaining resilience through the ability to operate without them when denied. Whilst one would not choose to do without every technological advantage, resilience will be critical to success. Strategy will need to exploit superior capability, but tactics will need to be able to do without it. *Si vis pacem, para bellum* will remain the successful mantra for a defensive alliance.²⁷

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Federated Maritime Intelligence Operations from the North Atlantic to the South China Sea: Expecting the Unexpected

James Fanell

On 6 October 2015, as I prepared a speech for a group of German, Polish, Scandinavian, and Baltic Army and Special Operations officers, as well as government defence experts, regarding the importance of NATO nations developing a federated maritime operations intelligence programme, I unfortunately had no idea the next day a Russian Navy squadron in the Caspian Sea would launch 26 SS-N-30A (Kalibr-NK) cruise missiles (range 1,500–2,500 kilometers) at Islamic State targets in Syria. This unanticipated Russian strike provided me with a compelling case for why NATO must act now to develop the tactics, techniques and procedures for sharing and federating intelligence operations across the maritime domain of the European theatre.¹

That incident reinforced my personal experience of nearly 30 years of conducting maritime operational intelligence (OPINTEL) that the *unexpected* must always be *expected*. During the past five years, that challenge has only increased as European nations have come to recognise the vital importance the maritime domain holds for their national security interests. This maritime domain importance is increasingly clear to them from their near shores to the far reaches of the Pacific, especially in the vital international waters of the South China Sea. Examples of the relevance of the maritime domain in Asia range from the seizure of Scarborough Shoal in 2012, the building and militarisation of seven artificial islands in the Spratly's since late 2012, or the recent reports of the PLA Strategic Rocket Force firing a salvo of anti-carrier ballistic missiles (DF-21D and DF-26) into the South China Sea. When combined with increasing military cooperation with Russia in the form of Joint Sea Exercises, these strategic indicators point to the threat the People's Republic of China (PRC) and Russia present to NATO member states throughout the Indo-Pacific.

1 Sam LaGrone, "Kurdish Video Lends Credibility to Russian Navy Caspian Sea Strike Mission Claims", *U.S. Naval Institute News*, 7 October 2015.

This chapter explores five factors related to why a federated maritime OPINTEL programme among NATO and its allied nations is absolutely essential for their future security. They are:

- *Expect the unexpected*, the intelligence professional's prime directive.
- Federated maritime operational intelligence in the 21st century.
- Intelligence sharing for allied navies and how this sharing can be used to further strategic thinking and decision-making.
- How the strategic community (governments, think tanks, universities, etc.) can provide input through information, intelligence and research to help address maritime security and strategy challenges.
- The benefits to NATO of sharing a common operational picture in terms of adversaries.

Expect the Unexpected

Intelligence professionals must understand how strategic foresight and predictive analysis at the operational and tactical level can influence an emerging allied maritime strategy. The story of the Russian Navy launching cruise missiles from the Caspian Sea across Iran into Syria in 2015 is not the first time a nation has used its naval forces to surprise an opponent. As a former Director of Intelligence and Information Operations for the US Pacific Fleet, I went to work each day passing by the remains of the USS Arizona, which was sunk by the Imperial Japanese Navy's surprise attack on 7 December 1941. While there are other examples of how naval power has been used to surprise an adversary, the study of these events is intended to help defence planners and decision makers to decide how best to diminish the likelihood of this kind of strategic surprise in the future. From my experience, the best way for NATO and allied nations to minimise this threat vector from the sea is to build a federated maritime OPINTEL programme. By building such a functional programme among NATO and allied members, the combined power of these nations can maximise the use of increasingly scarce resources for substantially more effective maritime domain awareness.

Federated maritime OPTINEL is the systematic approach used by naval intelligence teams to track ships, submarines and aircraft at sea 24/7, 365 days a year. By using fine-grained analysis from all sources in a networked arrangement, individual nodes are able to contribute to and receive a common operational picture. Today in the US Pacific Fleet, a federated maritime OPINTEL programme provides broad and deep situational aware-

ness of threats at sea, as NATO intelligence also does for land-based threats today, if not better. The creation of such a programme is the first line of defence in diminishing the likelihood of NATO being surprised by future attacks from the sea. The daily, disciplined tracking of ships, submarines and aircraft provides commanders, planners and decision makers with a current snapshot of the threats at sea. This data forms the very foundation of all defence decision-making regarding the maritime interests of all member nations.

Practically, a federated maritime OPINTEL system also provides the formulation of a high-fidelity database of maritime operations. When combined with the use of artificial intelligence, this database provides a deeper understanding of the changes in an adversary's naval force structure, its force disposition and minute changes to its operating posture. This knowledge is vitally important at the tactical and operational levels of war at sea.

Perhaps more importantly, at the strategic level this data can be used for long-term resource allocation decisions regarding the future size and disposition of member states' naval forces. By utilising this rich database of maritime operations, NATO nations can develop an understanding of the strategic trend lines of the Russian or PRC navies' capabilities and intentions. This understanding, which is currently lacking, is essential for NATO to educate elected officials and to make the case to their civilian populations as to why more resources should be allocated faster for the building of their own naval force structures.

The failure of NATO to provide this rigorous and systematic focus on the day-to-day tactical operations of an adversary's naval movements is a disservice to their nations and to the alliance. Lacking this intelligence, governments cannot make the kinds of hard decisions required to allocate resources to build the requisite naval force, thus putting member states in a continual position of vulnerability and strategic surprise.

Federated Maritime Intelligence Operations in the 21st century

US Navy OPINTEL was rapidly created in the immediate aftermath of the devastating attack on Pearl Harbor on 7 December 1941. Although in its infancy, its installation underpinned the dramatic victory at Midway—the turning point in the War in the Pacific—just six months later. Throughout World War II, the US Pacific Fleet's group of codebreakers and intelligence analysts refined the art and science of tracking the Imperial Japanese Navy. The Navy Intelligence community learned how to share this highly classified intelligence with operational US Navy warships and submarines

to great effect. It was from these origins that the US Navy created the Ocean Surveillance Information System (OSIS), which was used during the Cold War. The prime deliverable of the OSIS system was a shared, worldwide “plot” of the Soviet Navy from a network of US intelligence centres and facilities. It was this intelligence plot that enabled the US to compete with the Soviet Navy from the strategic level of force structure development down to the tactical level of “bumping-and-grinding” from the Kola to the Kamchatka peninsulas.²

Throughout the long Cold War, the US Navy’s OSIS system continued to refine and codify tactics, techniques and procedures based on the principles of all-source analysis, maintaining an intelligence plot and creating a link to operational forces and commanders’ intelligence requirements. Following the end of the Cold War in the early 1990s, as the Russian Navy retreated from the world’s oceans, the US Navy’s OSIS network began to erode. With the promise of a “peace dividend” and the shrinking defence budgets associated with it, along with the strategic shift in US national interest towards the Middle East, the structure of maritime OPINTEL devolved to the point of being extinguished within the US Navy. However, by 1999 it became evident to the US Pacific Fleet that the PRC was on a strategic trajectory to build a rival naval force, one that required the US Navy and its allies to be able to find, fix and track. Initially, the area of concern was in and around the First Island Chain, but over the course of the next two decades that area enlarged itself into a global concern.

After another decade of devolution, in 2012, the US Navy ushered in a new era of maritime OPINTEL with the formal establishment of the Pacific Fleet Intelligence Federation (PFIF).³ The PFIF provided detailed direction for the organisation and collaboration of the Pacific Fleet’s intelligence and cryptologic resources to support the maritime OPINTEL mission of the US Pacific Fleet’s area of responsibility. The PFIF represents a level of focus and systematisation not seen since the Cold War. What is unique about this ‘federated’ system is its collaborative nature, involving coordination from sailors across multiple organisations at various echelons, afloat and ashore, working in unison 24 hours a day, seven days a week to provide the most precise maritime OPINTEL to our afloat forces.

2 For more on the history of US Navy OPINTEL from WW II to the Cold war, see Christopher Ford and David Rosenberg, *Admiral’s Advantage: U.S. Navy Operational Intelligence in World War II and the Cold War*, (Annapolis: U.S. Naval Institute Press, 2014).

3 James E. Fanell, “The Birth of the Pacific Fleet Intelligence Federation”, *Naval Intelligence Professionals Quarterly*, October 2013.

Efforts are ‘federated’ across nodes in Japan, Hawaii, San Diego and Washington DC, along with relevant data collected by regional allies. The result is the adversary Common Operational Picture (RED COP). Through the RED COP, the PFIF provides Fleet Commanders and deployed forces precise geo-coordinate level intelligence regarding the location of maritime platforms across the Pacific Fleet’s area of responsibility. It also contains a detailed pedigree of the sources used to identify the location of an adversary unit.

By dividing tasks functionally and geographically, the ‘federated’ approach increases focus and deepens analysis of maritime threats. The end-goal is to more effectively and efficiently deliver intelligence on adversary naval operations intentions to commanders and decision makers at every echelon.

The Key Ingredient—Allies

As originally conceptualised, in the years since its creation the fleet intelligence federation has expanded from being a US-only enterprise to one that integrates maritime OPINTEL from allied and friendly navies, such as Quadrilateral Security Dialogue (the Quad) members Japan and Australia, with India poised to join soon. Since its beginnings in 2007, the Quad between Japan, the United States, India and Australia has operated both as a meeting format for senior officials to discuss regional security issues and has increasingly engaged in numerous naval exercises across the Indo-Pacific.⁴

Over the past decade, the US Pacific Fleet, the Japanese Maritime Self-Defense Force (JSMDF) and the Royal Australian Navy have benefited from this fleet intelligence federation whether by sharing open-ocean surveillance information collected by maritime reconnaissance platforms or by sharing and integrating RED COP data. With the recent India–USA 2+2 talks and the signing of information-sharing protocols, India is now poised to join an existing fleet intelligence federation. India’s participation will provide the architecture for achieving information superiority across the vastness of the Quad’s Indo-Pacific fleets, improving tactical intelli-

4 Patrick Gerard Buchan and Benjamin Rimland, “Defining the Diamond: The Past, Present, and Future of the Quadrilateral Security Dialogue”, *CSIS*, March 2020.

gence support to deployed naval forces and thus increasing their ability to deter aggression on the high seas.⁵

By developing its own maritime OPINTEL programme, NATO would be poised to join this emerging federated maritime OPINTEL system. NATO would clearly demonstrate that the shared value of “freedom of the seas” is a strong bond for democracies in the face of revisionist practices of exclusion and intimidation on the high seas.

The Role of the Strategic Community

What can the ‘strategic community’ (governments, think tanks, universities, etc.) do to contribute to the federated maritime OPINTEL environment? It is important to note here that, as in the Cold War, useful and timely OPINTEL is the result of efforts by the whole of society. While US naval intelligence professionals in the Pacific pay close attention to the comings and goings of the PRC’s maritime forces, experts in think tanks and academia have also contributed to the scholarship regarding Chinese activities at sea. The tactical movements of PRC naval, coast guard and militia forces are generally derived from classified sources (e.g. imagery, communications and acoustic intelligence). The European strategic community can contribute to the corpus of PRC maritime domain awareness through the existing and emerging number of unclassified sources available in the 21st century digital age.

The underlying story of the PRC’s maritime activities and expansionism is available from a variety of open sources. To satisfy the Politburo’s mandates and a patriotic public, China’s state-owned and state-controlled media routinely report about the operations and capabilities of PRC naval forces.⁶ In addition, Chinese academics publish detailed analytic reports regarding a broad array of the PRC’s maritime forces and their impact on

5 James E. Fanell, “Operationalise Quad through Federated Maritime Operational Intelligence”, *The Sunday Guardian*, 24 October 2020. <https://www.sundayguardianlive.com/news/operationalise-quad-federated-maritime-operational-intelligence>.

6 Examples of PRC media reporting on maritime warfare: Liu Xuanzun, “China reveals large destroyer's replenishment training for 1st time”, *Global Times*, 12 May 2020; Zhao Lei, “Navy sends its most capable combat ship on escort mission”, *China Daily*, 10 September 2019; “Two Chinese aircraft carriers complete routine training and sea trials”, *PLA Daily*, 24, September 2020.

the PRC's grand strategy.⁷ Likewise, PRC government agencies release reports cataloguing achievements, key objectives and the nation's new tasks across the maritime domain. Indeed, the quality and consistency of this data has enabled foreign analysts to use quantitative methods to test theories about shifts in Chinese diplomacy.⁸ The PLA, for its part, communicates through service publications, seeking to instil a collective consciousness of the PRC's stated desire to become a maritime power.⁹ All of these sources are open to the strategic community for research, analysis and reporting in support of a federated maritime OPINTEL programme.

To follow Chinese activities at sea, one does not need to rely on Chinese sources alone. Other foreign governments also release data regarding such issues as the PLA Navy, PLA Maritime Militia, China Coast Guard, the PRC's massive fishing fleet, global Belt & Road Initiative (BRI) port and airfield construction and access/control agreements, and PRC aviation activities across maritime regions.

Often this information is associated with a particular incident. For instance, in mid-2014, the Vietnamese press published numerous articles in English covering China's provocative deployment of an advanced new drilling rig (HYSY-981) in disputed waters south of the Paracel Islands.¹⁰ Likewise, Indonesia has released informative reporting about how it is responding to illegal Chinese fishing and coast guard activities taking place in their exclusive economic zone (EEZ) near Natuna Island.¹¹ More recently, Taiwan has been providing detailed reporting on the PLA's incursions into its southern Air Defense Identification Zone (ADIZ), which provides valuable insights into the PRC's grand strategy, as well as an appreciation of the operational capabilities of its armed forces. Japan has also played a leading role through the systematic publication of data on the PRC's maritime forces in the East China Sea, specifically around the Senkaku Islands, as well as out into the Philippine Sea. "Graphical depictions of these data vividly show Chinese expansion over time, from the inaugural intrusion of

7 Examples of PRC academic analysis on maritime warfare: Hu Bo, "Asian NATO' is difficult to achieve, but we must be highly vigilant", *Global Times*, 9 September 2020; Journal of Military Operations Research and Systems Engineering, vol. 33, No. 1, March 2019.

8 James Fanell and Ryan Martinson, "Countering Chinese Expansion Through Mass Enlightenment", *CIMSEC*, 18 October 2016.

9 "Xi advocates efforts to boost maritime power", *Xinhua*, 31 July 2013.

10 "Chinese vessels try to scare Vietnam's ships further away from illegal rig", *Tuổi Trẻ*, 9 June 2014.

11 Haeril Halim, Anggi M. Lubis and Stefani Ribka, "RI confronts China on fishing", *The Jakarta Post*, 21 March 2016.

two CMS vessels in December 2008 to the regular patrols that started in September 2012” and continue to today.¹²

Even the PRC has provided an example of how to exploit the use of open-source materials through their newly established “South China Sea Probing Initiative” (SCSPI). The SCSPI “is an open think tank and cooperative network of Chinese and foreign scholars aimed at comprehensively and objectively grasping the dynamics and news in the South China Sea by accurately probing the military, political, economic and environmental situation there”.¹³ The SCSPI tracks maritime and aerial platforms and releases fine-grained data on their movements from countries within and outside the region. In other words, the PRC has realised the importance of providing fine-grained, open-source data on the maritime domain of the South China Sea.

Any effort by NATO and its allies to conduct effective and safe operations in the Pacific, particularly in the South China Sea, would reap great benefit from being supported by a ‘strategic community’ that maximises the use of open-source materials. This information would inform NATO’s elected officials, policymakers and general publics about the environment in these troubled international waters—waters 1.5 times the size of the Mediterranean Sea that are increasingly important to their collective national security.

Sharing the RED COP

In addition to the European strategic community contributing to a better understanding of the maritime domain, NATO should also consider how it can translate its own RED COP into information for public release. While NATO naval forces use a classified RED COP, this does not prevent them from being able to issue standardised unclassified reports of the PRC’s maritime force disposition across the Indo-Pacific region. Technology used today by NATO intelligence centre watch-standers can automati-

12 “Trends in Chinese Government and Other Vessels in the Waters Surrounding the Senkaku Islands, and Japan’s Response”, *Government of Japan Ministry of Foreign Affairs*, 7 January 2021.

13 Liu Xuanzun and Guo Yuandan, “Interview with South China Sea think tank head shows three possibilities risking China–US military conflict”, *Global Times*, 2 August 2020.

cally produce such unclassified reports without posing a risk to their sources and methods.¹⁴

Releasing such data would benefit NATO nation's overall effort to better understand the PRC's maritime strategy and its implications for member state national security interests. It could also open up a whole new dimension of scholarship in which the PRC's maritime actions could be directly correlated against Chinese Communist Party (CCP) propaganda. Dangerous incidents could be placed in context, thus easing tensions or alerting NATO states to potential shifts in the strategic and operational environment, as well as better informing resource allocation to force disposition decisions.

While scholarship is valuable in and of itself, the ultimate purpose of such an initiative would be to improve the ability of democratic nations to respond to the challenge from a risen PRC. Elected officials, who ultimately decide policy, take cues from public discourse. Thus, if wise policies are to be crafted, the broader public must be cognisant of the PRC's pursuit of maritime power and the threat that it poses to our shared national interests.

This is especially important given that any proper response would require the collective whole of NATO to bear additional costs and risks. Unlike Russia, the PRC's actions have been carefully calibrated to not arouse the international community. The PRC's sophisticated Political Warfare operations are designed to help it achieve its objectives short of kinetic conflict, deceiving some key officials into believing China's maritime expansion is not a threat.¹⁵ This reality forces NATO to place a very high premium on the disciplined publication of open-source information about the PRC's actions in the maritime domain.

Open-source information alone is not a cure-all, but it certainly is an essential element of keeping track of the PRC's aggressive and expanding maritime power, which is spreading outwards from the Indo-Pacific. Indeed, today there is already enough information available in the public domain for Europeans to see and comprehend these key trends. As the NATO maritime intelligence federation develops data, even reluctant policymakers, government officials and politicians will have to either adjust

14 James Fanell and Ryan Martinson, "Countering Chinese Expansion Through Mass Enlightenment", *CIMSEC*, 18 October 2016. <http://cimsec.org/countering-chinese-expansion-mass-enlightenment/28781>.

15 Kerry Gershaneck, *Political Warfare: Strategies for Combating China's Plan to "Win without Fighting"*, Marine Corps University Press, Quantico, Virginia, Chapters 1 & 3.

previously ill-informed and incorrect perspectives or risk self-marginalisation.

Sharing detailed data about the PRC's maritime activities at sea would also likely have an impact on regional and other foreign public citizens and governments which can use it to draw more realistic conclusions about the implications of China's rise. Further, by pursuing these recommendations, a network of informed nations would enable and enhance NATO's diplomatic efforts in the Indo-Pacific region. Making such information widely available to the international community would also help to counter the CCP's false narrative that America and its allies are the root cause of instability in the Indo-Pacific.

Conclusion: A Word of Warning

Those within the NATO and European strategic community who accept these recommendations should be aware of a cadre of professional bureaucrats who assert that focusing on the RED COP will cause intelligence teams to underperform at the operational level of war. These naysayers assert that the pursuit of and focus on fine-grained maritime OPINTEL will come "at a cost in time and effort that cannot be devoted to the analysis of alternatives needed to be predictive".¹⁶ This view also asserts the following self-serving straw man, "if past remains prologue, the failure will be blamed on the intelligence chief [...] not the commander's lack of operational vision."¹⁷

After nearly 30 years of experience of working in the field of maritime OPINTEL, I reject such assertions and argue the contrary: by adopting a robust and federated maritime OPINTEL programme, commanders in the fleet up to decision makers at the highest levels will make better decisions based on facts, not on uninformed assumptions.

As some NATO nations begin to significantly expand their naval operations in the waters of the Indo-Pacific, it would be in their best interest to take the time to develop and dedicate resources to the building of a truly federated maritime OPINTEL programme. The implementation of this programme would also have the desired benefit of enticing European stra-

16 B. Lynn Wright, "Naval Intelligence: Listen to the Fleet", *U.S. Naval Institute Proceedings*, vol. 147/1/1, 415, January 2021.

17 *ibid.*

tegic thinkers to devote more time and attention to the study of these turbulent waters. Ultimately, the benefit is for the people of these nations and their desire to live and sail freely throughout the world.

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Section 4:

Planning, Preparing, and Reality

Maritime Operations and Missions: The Falklands Case

Chris Parry

Introduction

The Falklands War of 1982 was an anomaly within the context of the Cold War. Despite periodic shadow-boxing (most recently in 1979), no one anticipated that Britain and Argentina, the ally and partner respectively of the United States (US) in common opposition to the Soviet bloc and whose political, economic and military ties were stable, if not exactly close, would come to blows. Nevertheless, in April 1982, an Argentinian military junta, under pressure because of its political, economic and human rights record, authorised an opportunist seizure of the Falklands, only to find a British democratic regime, itself under pressure because of its falling popularity and weak economic stewardship, equally prepared to exploit an opportunity, by first threatening and then using force, to regain the islands.

The defence posture of each country certainly did not reveal overt plans for a high impact conflict with the other. Argentina's defence policy centred on capabilities required to provide deterrence and defence in relation to its neighbours, notably with Chile, against which it also harboured territorial ambitions; to assure the US of its reliability as a partner in a region susceptible to Marxist leanings; and to maintain coercive control over its population. Meanwhile, the United Kingdom's strategic posture and defence policy was predicated on membership of the NATO alliance. As a result, British threat analysis, procurement and fighting doctrine was geared towards the challenge of the Soviet Union and the Warsaw Treaty Organisation (WTO) in Central Europe and a maritime focus on the North Atlantic, the Norwegian Sea, the Channel and the Baltic. This formed part of a NATO maritime strategy that envisaged containment of the Soviet Northern and Baltic Fleets, forward defence in depth and the holding of the Iceland–Faroes–UK line in order to ensure the safe arrival of reinforcement shipping from North America. The principal threats would be missile and torpedo firing submarines and long-range aircraft armed with high-trajectory anti-ship missiles.

British defence policy and the 'nott review'

Consequently, British defence strategy relied on the assurance that allied, notably US, capabilities would be available, both to supplement UK and other allied capabilities and to cover significant capability shortcomings. There was also the implicit but vague understanding that British forces that were trained and equipped to deter and defeat the WTO within the structure of NATO would be sufficient to deal with any out-of-area threat to British dependencies (as they were then known).¹ No detailed attention had been paid at either the government or military level to the action and capabilities that might be necessary in the event of hostile powers threatening or seizing these dependencies, most of which were at extended distances from the UK.²

The 'Nott Review' of 1981³ reinforced this posture, while reducing expenditure in response to an economic recession in the early 1980s, even though defence spending constituted 5.2 per cent of GDP.⁴ Its focus unflinchingly remained on support of NATO on the Central Front in Europe and the transatlantic reinforcement routes, with scarcely a mention of Britain's out-of-area commitments.⁵ It assumed that UK forces would not deploy on combat operations outside the NATO area and then only with the participation of allies and within range of land-based air support.

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- 1 'We exploit the flexibility of our forces beyond the NATO area so far as our resources permit, to meet ... specific British responsibilities', CMND 8288, *The UK Defence Programme: The Way Forward* (HMSO, 1981), 5. After the Falklands War, it was reiterated that 'the policy of successive Governments has been that operations outside the NATO area should be undertaken by forces whose primary role is in support of the Alliance', CMND 8758, *The Falklands Campaign: The Lessons* (HMSO, 1982), 32.
 - 2 In practice, the Royal Navy retained the capability of what was termed out-of-area deployments and intervention, notably in the Caribbean and in the Gulf region (based on the ARMILLA patrol) and periodically engaged in group deployments to the Asia-Pacific region. It also routinely operated off the US East Coast for training and in support of major NATO exercises in the North Atlantic.
 - 3 More precisely, *The UK Defence Programme: The Way Forward* Command 8288'. This major review of the United Kingdom's defence policy was conducted by the Conservative government of the Prime Minister Margaret Thatcher. Its main sponsor, and proponent, was the then Secretary of State for Defence, John Nott.
 - 4 *Command 8288*, 3.
 - 5 'We have now four main roles: an independent element of strategic and theatre nuclear forces committed to the Alliance; the direct defence of the United Kingdom homeland; a major land and air contribution on the European mainland; and a major maritime effort in the Eastern Atlantic and Channel' (*Command 8288*, 5).

There would be no need for a UK amphibious assault.⁶ It breezily and fleetingly mentioned that ‘our forces will also continue as necessary to sustain specific British responsibilities overseas, for example in Gibraltar, Cyprus, Belize and the Falkland Islands’.⁷ It even stated an unintentionally prophetic but vague intention ‘to resume from 1982 onwards the practice of sending a substantial naval task group on long detachment for visits and exercises in *the South Atlantic*, Caribbean, Indian Ocean or further east’.⁸ It claimed, without irony, to be a ‘realistic, unsentimental and up-to-date judgement of what will be most relevant and effective in future years’.⁹

The Nott Review (and its predecessors) reflected attempts by governments to reconcile ends (what the public and politicians wanted), means (what they could afford) and ways (the ability of a country to deliver in human, militarily practical and technological terms). The trick was not to spend too much on defence, in case the public complained, and not too little, lest defence appeared no longer credible in deterring opponents and rivals and in reassuring allies. Unfortunately, national policies tend to reflect consensual rather than objective assessments about the future, the imperatives of steady-state administration and a ‘strategic narcissism [that] leads to policies and strategies based on what the purveyor prefers, rather than on what the situation demands’.¹⁰ These features are often compounded by an ignorance or misuse of history, a neglect of hard-won lessons and the use of simplistic analogies that mask flaws in policy or strategy. Worse still, the resulting strategy is rarely a template for the pressing demands and practicalities of warfare should policy and deterrence fail and the armed forces are required to fight, which can lead to situations where the declared ends of policies and national strategies rarely balance the ways and means by which they can be put into practice. Put simply, if you insert something into national strategy, you should mean it.

6 The work associated with the review discounted Britain’s need for aircraft carriers or amphibious forces, and its provisions and projections have generally been considered to have been one of the contributing factors that encouraged Argentina to seize the Falkland Islands.

7 *Command* 8288, 11. It signally failed to differentiate between the threat levels associated with these territories.

8 *Command* 8288, 11.

9 *Command* 8288, 14.

10 H. R. McMaster, *Battlegrounds: The Fight to Defend the Free World* (William Collins, 2020), 56.

The Falklands case

These aspects and the 'wide gap between the assumptions on which some policies and strategies [were] based and the reality of situations on the ground'¹¹ characterised Britain's experience in the Falklands War. Seen through the lens of the South rather than the North Atlantic, the Royal Navy was deficient in several categories of high-end warfighting capacity, the availability of which had been taken for granted in the event of a war or conflict within an allied structure. These included Airborne Early Warning, land-based combat aircraft, a large fleet of logistics support and the defence in depth and combat power associated with US Carrier Battle Groups and their associated air wings. In addition, there was reasonable uncertainty as to whether the platforms, systems and trained manpower that had been prioritised against the WTO would be as effective against an opponent deploying weapons and systems supplied by the West in the distant waters of the South Atlantic. It is significant that most senior civilian and military experts in both the US and the UK assessed the enterprise to be unfeasible.

Nevertheless, the political imperative to retake the Falklands allowed many of the operational and tactical shortcomings that were implicit in strategic-level planning to be glossed over amid the prevailing enthusiasm and 'can-do' attitude. The risks inherent in deploying out-of-area, with every element of combat power having to be transported 8000 miles into a hostile theatre, were only loosely calibrated in comparisons between existing policy and strategy assumptions and the context of the South Atlantic. There was confidence that continuous individual and collective training, operational efficiency and participation in large-scale NATO exercises, coupled with a high level of technological sophistication, would allow the Royal Navy to prevail. Unfortunately, as in this case, however much navies anticipate the technologies and tactics required to mitigate generic risks, they generally fail to implement rigorous programmes of material preparation and training to meet specific contexts and threats, especially those they do not expect to face or do not fully assess. The result for the British, and to an extent the Argentinians, was that their armed forces ended up 'learning by doing' (often the hard way).

In the event, the British comprehensively won the war. From a balanced fleet of carriers, amphibious ships, submarines, destroyers, frigates and

11 H. R. McMaster, *Battlegrounds*, Introduction.

afloat support ships,¹² nuclear submarines, the contribution of naval and other embarked aviation (especially the SEA HARRIER and AIM-9L SIDEWINDER air-to-air missile combination) and professional, experienced land units were decisive in narrowing the marginal force ratios that the British faced in theatre.¹³ Their baseline level and breadth of capability and experience allowed for innovation and improvisation in the face of fluid operational circumstances, not least in response to the unexpected challenge of facing Western-derived weapons systems and the need for novel tactics and techniques on those occasions when the balance of relative fighting power did not favour them.¹⁴

In particular, the deployment of the Task Force in short order and the establishment of the logistical lines of communication necessary to sustain the operation over 8000 miles were possible because British warships were manned, stored and equipped to NATO warfighting levels, with a high level of operational and technical readiness and near full ammunition states. The warships and aircraft were able to fight on a 'come as you are' basis, although with very little opportunity for the British to fit them with enhancements or specialist role equipment in order to adapt them specifically to the South Atlantic case. It might be remarked that this ability to transition quickly from peace to war in 1982 contrasts with the situation today in most free world navies that maintain peacetime levels of readiness and capability, on the basis that there will always be time and resources to prepare for operations and war. In an emerging future of strategic competition and potentially contested sea spaces, this approach is likely to need reassessment and adjustment.

12 The effort required the commitment of 26 warships and submarines (later rising to 44) supported by 24 ships of the Royal Fleet Auxiliary and Royal Maritime Auxiliary Service, as well as 54 requisitioned civilian ships taken up from trade (STUFT).

13 The operation also benefited from long-range air reconnaissance, strike and refuelling sorties from the small British territory of Ascension Island, 3800 miles from the Falklands, as well as an extensive air transportation bridge between the United Kingdom and Ascension.

14 In this aspect, there is a clear echo of the US naval experience at Guadalcanal from July 1942 onwards (Richard B. Frank, *Guadalcanal* (New York, Random House, 1990), 123.

Some lessons for strategic planners

Detailed lessons, including improvements and enhancements to materiel, systems and weapons required after the Falklands War, were contained in *Command 8758, The Falklands Campaign: The Lessons* (HMSO 1982) and need no further comment here. Several other features are of general relevance and interest to strategic and operational planners today.

The first of these is that navies need to prepare and equip themselves for war in general, not exclusively for any particular war or scenario. It pays to remember that you rarely get—or are prepared for—the war that you have to fight. In 1982, the British human and systems capabilities were benchmarked against the Soviet Union, which would now be termed a peer-plus opponent. As such, they should in theory have overmatched an opponent with less operational experience and technical sophistication. However, it needs to be recalled that only a proportion of the armed forces of each country were engaged in the war and neither home country was under threat. Owing to the geographic proximity of the Falklands to Argentina and the limited size of the British deployment, Britain was effectively acting as if it were one of Argentina's local opponents and was not able to fight the war as it would have liked.

As a result, the risks for a predominantly oceanic navy were substantially increased and underestimated, especially in it having to impose and maintain a territorially anchored exclusion zone and to operate close in-shore. It initially faced a significant challenge from the Argentinian navy (until, except for the submarine ARA *San Luis*, it withdrew after the sinking of ARA *General Belgrano*) and a constant threat from a capable air force and naval air arm which were able to generate, in relative terms, high sortie rates against topographically constrained warships and a small number of *Sea Harriers*. This blind spot was compounded, or perhaps caused, by unrealistic expectations about weapons and sensor performance, especially in the absence of Airborne Early Warning. Justifiable concerns about the low numbers of *Sea Harriers* and the performance of air surveillance and target acquisition radars close to land and against missiles and aircraft at extremely low levels were discounted, as was the fact that only the radars in the two Type 22 frigates possessed automatic moving target indicator features. Both *Seadart* (with which the Argentinians were intimately familiar)¹⁵ and *Seaslug* medium-range anti-air missiles were only suitable for engagements well out to sea and against targets that obliged by flying at suit-

15 By virtue of operating two British derived Type 42 destroyers.

able engagement altitudes. Meanwhile, there was very little confidence in the ability of the widely fitted *Seacat* anti-air missile to hit agile, manoeuvring targets.¹⁶

Another major British deficiency was the ducted sonars in surface ships, although this did not result in catastrophic losses.¹⁷ The Royal Navy operated up to and after the war with obsolete sonars which seldom delivered acoustic detections outside the range at which any self-respecting submariner would fire a torpedo. For decades in the Cold War, and in the Falklands War, Royal Navy surface ships persisted in transmitting on sonars, which is associated with similarly archaic tactics, whose primary unwitting purpose (owing to extended counter-detection ranges) was to attract the very submarines that they were supposed to detect. It was well into the 21st century before suitable surface ship active sonars (such as Low Frequency Active Sonars and bi-static arrays) became available in order to detect submarines at operationally useful ranges, along with tactics that further privileged the role of helicopters, aircraft and other submarines.

Sustainability

Another risk for the British was that the conflict quickly became a war of attrition and a critical issue centred on which side was able to stay in the fight long enough to achieve its (limited) objectives. Consequently, it was crucial that each opponent should not be able to determine the point at which one side's ability to continue to fight could be seen to be exhausted by its inability to access sources of materiel, stores and munitions. Britain moved quickly to ensure that additional *Exocet* missiles did not reach Argentina and secured a series of UN resolutions that not only isolated the Falklands geographically, but also choked off sources of material and armament supply to Argentina. As a result, the shortage of technical spares available to the Argentinian Type 42 destroyers and Type 209 submarines was known to the British, as was the number of AM-39 *Exocets*. These features and other intelligence about Argentina's restricted sustainability and access to supply chains fundamentally defined the geometry of the con-

16 *Seacat*'s capabilities were well known to the Argentinians through their own *Tigercat* systems.

17 The same deficiency was apparent in the Argentinian Navy, as was evident with the loss of the *General Belgrano*.

flict.¹⁸ Conversely, Britain was able to secure essential supply from the US, most notably the AIM-9L *Sidewinder* air-to-air missiles, mortar rounds and 12.5 million tons of aviation fuel.¹⁹ For their part, the Argentinians never made a concerted effort to interdict the British lines of logistics communications.²⁰ Despite the fact that the Argentinians had plenty of combat materiel on land (but little food for the troops), the progressively high rate of attrition among the Argentinian Air Force and naval air arm aircraft and aircrews (and in having only two AAR C-130s)²¹ seriously limited the extent to which they could sustain sortie rates to prevent the islands being recaptured. At no stage did the Argentinians make a concerted effort, other than trying to eliminate one or both of Britain's aircraft carriers, to empty the Task Force's locker of *Sea Harriers* by engaging in systematic air-to-air combat. Nor were they able to conduct a sufficiently robust defence of the islands long enough for the Antarctic winter season and logistics shortages to frustrate British attempts to force a surrender.²²

This factor is highly relevant today as countries of the free world face the prospect of strategic competition with states, like China and Russia, that have the military strength and indigenous industrial capacity to sustain a high operational tempo over an extended period. Conversely, the military and naval capacities and supply chains of most countries in the free world, apart from the United States, are explicitly finite, with long lead-in times for the production of increasingly scarce platforms and systems across all environments, not least in the maritime dimension.

Individual and collective training

A key principle in relation to military effectiveness and improvisation is the value of training and exercises replicating how a country intends to op-

18 Even though Argentina was able to procure additional fighter-bombers from Peru and MANPADS anti-air systems from Libya.

19 A more complete list includes 200 *Sidewinder* anti-aircraft missiles, eight *Stinger* anti-aircraft systems, *Harpoon* anti-ship missiles (for *Nimrods*), mortar shells, satellite intelligence, communications facilities and the use of Wideawake Airfield on Ascension Island.

20 Late in the campaign, C-130 aircraft were equipped to carry bombs and attacked two ships, the tanker *British Wye* and the *Hercules*.

21 In addition, the *Mirage* Vs were unable to conduct AAR.

22 The British had planned for this possibility in their earlier seizure of South Georgia, whose Cumberland Bay would have provided a makeshift base for the Task Force and its operations had the war continued into the winter months.

erate or fight during a conflict.²³ In the 1980s, Royal Navy warships and other units were trained individually and collectively to a high standard of operational efficiency, provoking the comment in several memoirs that combat in the Falklands resembled a live version of the training with which all were familiar.²⁴ Likewise, the idea that the training ground should be the battleground worked in Britain's favour. The Royal Navy and its Royal Marines had extensive experience of operating in the arduous conditions of the North Atlantic and the more severe conditions of the Norwegian Sea and the Arctic. They therefore adapted readily to the extreme environmental conditions of the South Atlantic. This aspect argues more broadly for naval forces to deploy and exercise regularly in areas of strategic interest so that they acquire sufficiently comprehensive familiarity with a context in which they might have to fight. Similarly, the detailed study of previous naval 'battlegrounds' is an underused resource, with benefits for the moral and conceptual components of fighting power, not least in extracting examples of best operational practice, command understanding and contextual awareness.

Action damage

A related issue is that of Action Damage. Before the Falklands conflict, persistently overly optimistic assumptions prevailed with regard to platform survivability and equipment resilience, not only in the inadequate provision of appropriate firefighting and damage control measures (notably smoke limitation and breathing apparatus), but also about the scale of direct and collateral damage that could be inflicted by anti-ship missiles, bombs or torpedoes. It is significant that three Type 42 destroyers did not last long in the conflict, having been struck by a single non-detonating *Exocet* missile (SHEFFIELD), three 500 lb bombs, only one or two of

23 Very few navies have come close to the Imperial Japanese Navy's high-risk approach of tactical realism and live fire exercises before World War II, which resulted in frequent ship and aircraft casualties, but stimulated a highly aggressive fighting spirit and a pronounced initial advantage in night operations.

24 Of course, there are limits to the amount of operational and tactical realism that is possible in exercises and training, as no objective short of conflict justifies the category of risks that might be necessary in war. Fortunately, this is an area where simulation and gaming can increasingly assist visualisation and permit repeated practice, especially in the emerging world of augmented and mixed-reality technologies.

which exploded (COVENTRY), and a single 500 lb bomb, which did not explode (GLASGOW). Conversely, older ships, such as the Type 12 and LEANDER class frigates and the County class destroyers, were able to absorb damage. Planning and training had rarely taken into account, and rarely considers today, the extent to which platforms and people have to be tough, be able to absorb action damage and sustain the physical rigours and mental terrors of combat. A modern warship might recover sufficiently to be able to float and even move, but it is unlikely to be able to continue fighting, and the risk, survivability and cumulative force ratio implications of a warship being struck by a cruise missile, bomb or a heavyweight torpedo are rarely considered at the strategic level of planning.

Weapons planning

Anticipated weapons use is always underestimated by the proponents of policy or strategic plans. Unsurprisingly, the high rates of consumption of all types of ammunition, equipment and specialist stores by the British were recognised after the war, to the extent that there was a comprehensive review of 'the size and composition of the stockpile intended to support operations outside the NATO area and its relationship to NATO war stocks'.²⁵ Engagement criteria in combat can never be entirely precise owing to the margin of error inherent in risk assessment and in the detection and classification of potential threats. In the Falklands, this was especially the case in anti-submarine warfare, which, on the British side, had to deal with complicated acoustic contexts and a diverse range of plausible detections, including sea ice, marine mammals and underwater anomalies. The result was that, in defending British units from the attentions of two active Argentinian submarines, the Royal Navy expended 31 anti-submarine torpedoes, 49 depth charges and 21 anti-submarine mortar rounds. One Argentinian submarine (*ARA Santa Fe*) was detected and successfully engaged with two depth charges, and no British ship was hit by submarine-launched weapons. However, as the purpose of anti-submarine warfare is not necessarily the destruction of submarines, but to prevent them from having an influence on operations, the British forces can be considered operationally successful in this regard.

There is also a tendency in strategic assessments to be complacent, if not disingenuous, about the effectiveness and reliability of weapons systems

25 *Command 8758 The Falklands Campaign: The Lessons* (HMSO, 1982).

and sensors; systems are rarely tested against the rigorous criteria required in war, and there is casual acceptance of underperformance and failure in peacetime. The principal British SAM systems have already been mentioned. It will be recalled that Argentinian mechanical bomb fuses failed to arm (at extremely low levels) and the ST-4 torpedo in the submarine *San Luis* was operationally incapable of use. The commanding officer of the British submarine *Conqueror* chose to use stolidly reliable Mk 8 torpedoes instead of the modern *Tigerfish* versions against the ARA *General Belgrano*.²⁶ This aspect reinforces the need for rigorous testing and regular firing regimes in peacetime to build assurance about the performance of these systems under pressure and when it counts. It is not sufficient to rely on built-in testing and simulation, but to persist with live fire test demonstrations, not only to give operators experience of live firing (the smell of cordite and the moral component), but also to advertise effective capabilities to one's potential (and possibly eventual) opponents.

Procurement

One of the persistent weaknesses in defence programming is the sacrifice of capability in order to meet price and time criteria, thereby eroding the connection between strategy, concepts and capability. The assumption is that deficiencies can always be addressed before the platform or system is required to prove itself in combat and that short-term risks can be tolerated in the programme.²⁷ This risk is further compounded by the fact that equipment is ordered and procured years in advance of its entry into service, by which time its weapons and systems can be partly or wholly obsolete, unless upgrades or technological insertions are incorporated into a nation's programme.

The British Type 42 destroyer was a case in point. Originally conceived as an advanced anti-aircraft and anti-missile (Soviet variety) platform, it was supposed to have been equipped with next generation radars and a range of capable electronic countermeasures and decoys, as well as a maga-

26 This experience recalls the poor performance of British, German and US submarine-launched torpedoes in the opening years of World War II contrasted with the high levels of reliability and operational effectiveness of Japanese torpedoes, notably the 'Long Lance'.

27 'Management risk' has long been defined in the Royal Navy as the risk that managers took safe in the knowledge that they would never be exposed to the risk that they were proposing.

zine that would hold up to 40 SEADART SAM missiles. It was to have a standard 4.5-inch gun and a LYNX helicopter.²⁸ At one stage, it was proposed that the ship should have two lightweight SEAWOLF short-range missile launchers. In the event, the first of the class, SHEFFIELD, and her first three sisters were commissioned into Royal Navy (and Argentinian) service with radars and combat systems that were already obsolete, a poorly performing jammer, a SEADART magazine size of 20 and an ageing WASP helicopter. SEAWOLF had been shelved.

The problem here was that the policy assumptions and concept were compromised by a largely undisclosed, cumulative risk being built into the capability. It relied on this bluff never being called. Unfortunately, the Type 42's bluff was called, with tragic consequences, as the ships that were originally envisaged were not the ones sent to the Falklands.²⁹ In the modern fast-paced technological and diverse threat environment, these factors argue strongly for modular and software-enabled applications and frequent technology insertions, linked to common power and digital frameworks.

Information

An aspect that was peculiar to the Falklands crisis was the way in which information and public participation were tightly contained and constrained. The remoteness and inaccessibility of the islands, as well as the limitations of communications and security considerations at the time, meant that media coverage and public scrutiny were severely restricted. Even the journalists who were embedded with the Task Force, both ashore and afloat, could only send their copy through military communications circuits, with the timing and content largely determined by political and military considerations.³⁰ All other print and broadcast information would take at least two weeks to emerge via Ascension Island. Similarly, public participation was discouraged, not only by the dangers inherent in being in a potential or actual combat theatre and the imposition of an exclusion

28 Leo Marriott, *Combat Ships 3: Type 42* (Shepperton: Ian Allen Ltd, 1985).

29 It is significant that the subsequent Batch II and, in particular, the Batch III of the class reflected the lessons learned from the Falklands and, in part, the original concept.

30 This aspect did not prevent the BBC in London speculating (accurately) about imminent British action against South Georgia and Goose Green and revealing that Argentinian mechanical bomb fuses were malfunctioning.

zone, but also by the challenges presented by the weather and environment.

This is not likely to be a situation that will be repeated. Today, one can anticipate the difficulties for the combatants associated with modern communications, sensors and attitudes. It is not difficult to envisage commercial satellite and online media exploitation of a situation, the appearance of extraneous drones and manned platforms, attempts by both state and amateur hackers to interfere in all aspects of the electronic battle and the exposure of critical units through betrayal of their electronic, infra-red or physical signatures. It is possible that the integrity of an exclusion zone at sea imposed by one side or the other could be compromised by large numbers of fishing or other civilian vessels intruding to confuse and complicate situations. The ability of authoritarian states to generate this type of confusion has been demonstrated in disputes in various exclusive economic zones.³¹ At the same time, the proliferation of high-end modular weapons and sensor systems in an increasing diversity of civilian platforms will further complicate ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) functions.³²

Conclusion

The key lesson from the Falklands conflict is that allied or national navies—and armed forces in general—should not rely on the imperfect assumptions that underpin peacetime-generated strategy, complacency about partnerships and abstract policies when they are likely to be faced by high-impact warfare in relation to the political outcomes that they are tasked to deliver. In a world of strategic competition, the likelihood is that only real, demonstrated and immediately available and collective combat capabilities will be sufficient to both prevent conflict and deter opportunists and potential aggressors at every level of interaction. In order to prepare for these eventualities, it is necessary to rigorously interrogate and analyse the totality and variety of the contexts in which political and military objectives

31 Korkmaz, H., 'Hybrid Warfare and Maritime Militia in China'. <https://www.aa.com.tr/en/analysis/analysis-hybrid-warfare-and-maritime-militia-in-china/1897259>.

32 Such as the ability to deploy container-based surface-to-surface weapons. <https://www.navalnews.com/naval-news/2020/08/russian-navy-to-begin-trials-of-modular-systems-for-surface-vessels/> and <https://www.navyrecognition.com/index.php/news/defence-news/2019/april/6971-china-is-building-long-range-cruise-missiles-launched-from-ship-containers.html>.

might be realised and to assess within that context whether the allied or national military ways and means are sufficient and appropriate in order to achieve success, mitigate the identified risks and cope with the inevitable operation of chance.

As Nelson wrote, 'Something must be left to chance; nothing is sure in a sea fight above all'.³³

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33 Sir Nicholas Harris Nicolas (ed.), *The Dispatches and Letters of Vice Admiral Lord Viscount Nelson with Notes* (London: H Colburn, 1866), VI, 19.

The Complex Function of Exercises in a Maritime Strategy of Deterrence

James H. Bergeron

Exercises occupy a central place in both the theory and practice of naval strategy, and in particular a strategy of deterrence.¹ They serve complex purposes designed to convey capability and intent to adversaries, assurance to allies, to provide training and force integration for one's own forces, to promote the maritime services to political leaders, or some combination of these. Examining the role of exercises in strategy must ask the question, strategy to what end? This invites a consideration of the overlapping or conflicting purposes of exercises as they relate to different aspects of maritime strategy.

The Changing Focus of Allied Exercises

In the Cold War, the dominant political and military strategy against the Soviet Union was containment built on deterrence. This was reflected in the great naval exercises of the early Cold War: MAINBRACE, LONG STEP and MARINER. They integrated allied forces, forged bonds of trust between military leaders and tested the early NATO's collective warfighting ability. But notably, the military itself did not speak of these in deterrent terms of signalling capability or resolve. NATO's 1952 internal report on Exercise MAINBRACE is entirely focused on operational lessons learned in how to fight a war.² If deterrence was the political objective, it was absent from how the warfighter at least officially approached the exercise or its meaning.

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- 1 As Professor Beatrice Heuser points out, there is a dearth of literature on the strategic function and effects of military exercises. See Beatrice Heuser, Tormed Heier and Guillaume Lasconjarias (eds.), *Military Exercises: Political Messaging and Strategic Impact*. Rome, NATO Defence College Forum Paper 26, 2020, 1–4.
 - 2 See S.G 207/3 Report by the Standing Group to the Military Committee on NATO Exercises – 1952, 21 November 1952, 47–50, declassified, available at https://archives.nato.int/uploads/r/null/1/1/114838/SG_207_3_ENG_PDP.pdf.

That operational deterrent focus matured along with the Cold War. No exercise was more focused on sending a deterrent message than the OCEAN VENTURE series developed by US Secretary of the Navy John Lehman, Vice Admiral Ace Lyons and Vice Admiral Hank Mustill in the early 1980s.³ As Diego Ruiz-Palmer notes, Ocean Venture was designed precisely to demonstrate to the Kremlin the unmatched US superiority by threatening Soviet SSBN bastions off the Kola Peninsula.⁴

After the Cold War, maritime exercises reverted again to a focus on training and interoperability in series like MARINER directed by NATO HQ Naval Forces North and South, and by Destined Glory and Midas, directed by Naval Striking and Support Forces South (STRIKFORSOUTH) and later its successor Naval Striking and Support Forces NATO (STRIKFORNATO). Messaging in these exercises was largely internal, signalling commitment to the NATO Response Force, which was created as an instrument of transatlantic burden sharing. Scenarios tended to focus on out-of-area crisis management, counter-insurgency and counterterrorism missions.

BALTOPS is a good example of an allied exercise series changing its purpose over time. Founded in 1971 by the US Navy, it was the largest maritime exercise in the Baltic. In its early years, it showed US willingness to brave the Baltic Sea (a Red or neutral lake at the time) and connect with its allies. But its naval posture was relatively modest and predictable. That changed in the 1980s with the Lehman Maritime Strategy. In BALTOPS 1985, DESRON 14 entered the Baltic with a major show of strength, including a six ship Surface Action Group including the battleship USS Iowa BB-61 and the nuclear-powered cruiser Ticonderoga CG-47.⁵ The first US Navy visit to Poland since 1927 occurred in BALTOPS 1990.

With the end of the Warsaw Pact and the collapse of the USSR, BALTOPS shifted towards the integration of Partnership for Peace nations and later the involvement of Russia as a strategic partner. Scenarios became softer, reflecting the Balkan Wars, the Global War on Terrorism and, after Hurricane Katrina, the 'Global War on Weather'. The 2009 exercise was advertised as 'a joint operation that allows personnel from partner na-

3 See John Lehman, *Oceans Ventured, Winning the Cold War at Sea* (New York: W.W. Norton & Co, 2018).

4 Diego Ruiz-Palmer, "Military exercises and strategic intent through the prism of NATO's Autumn Forge exercise series, 1975–1989", in *Military Exercises: Political Messaging and Strategic Impact*, eds. Beatrice Heuser, Tormed Heider and Guillaume Lasconjaraías (Rome: NATO Defence College Forum Paper 26, 2020), 88–89.

5 See NavSource Archives at <http://www.navsource.org/archives/01/57s.htm>.

tions to prepare for disaster relief efforts, humanitarian assistance and peacekeeping efforts'.⁶ Russia joined in several of the BALTOPS exercises, which was always a bit difficult and created the sense they were primarily in there to watch us.

The mood shifted after the 2008 Georgia–Russia conflict. In the 2000s, BALTOPS had conducted amphibious landings in Poland, but in 2010⁷ and again in 2012⁸, BALTOPS conducted amphibious landings in the Baltic States, the first time ever in former Soviet territory. It was intended as a clear signal of US and Baltic solidarity against Russian aggression.

After 2014 Russia dropped out of BALTOPS, which became flagged as a 'NATO' associated exercise. The trend towards counter-aggression as a focus deepened. STRIKFORNATO became the default Commander, reflecting the NATO role of Commander US Sixth Fleet. In 2019, BALTOPS was commanded by VADM Andrew 'Woody' Lewis, COMSECONDFLT in their first exercise deployment.⁹

BALTOPS 2019 was also notable in being linked to the UK-led BALTIC PROTECTOR deployment and exercise of the Joint Expeditionary Force.¹⁰ 17 vessels led by HMS Albion participated in joint integration training, joined BALTOPS and then linked up with the British eFP battle group in Estonia to conduct amphibious landings and raids. Its publicity described JEF as 'Willing and able to act without other nations' but 'prepared to work alongside NATO, EU, UN and other Allies'. BALTIC PROTECTOR is politically interesting in signalling the use of exercises to promote coalitions of the willing outside the NATO construct, but presumably to repel aggression in the NATO Area of Responsibility.

Other contemporary maritime exercises worth considering include NORTHERN COASTS, a well-established MCM training event since 2007 that sends a strategic message about keeping open the Danish Straits. The exercise is usually based on a fictitious country making territorial claims in

6 DODLive 16 June 2009.

7 DeFilippis, Rocco, "BALTOPS 10 MPF Operations Kick Off in Latvia", *Marines*, 8 June 2010, available at <https://www.marfor eur.marines.mil/News/News-Article-Display/Article/520886/baltops-10-mpf-operations-kick-off-in-latvia/>.

8 "Allied landing demonstrates crisis response efficiency", *The Baltic Times*, 13 June 2012, available at <https://www.baltictimes.com/news/articles/31379/>.

9 Werner, Ben, "U.S. 2nd Fleet Kicks Off BALTOPS 2019", *USNI News*, 7 June 2019, available at <https://news.usni.org/2019/06/07/u-s-2nd-fleet-kicks-off-baltops-2019>.

10 Eckstein, Megan, "New U.K.-Led Maritime First Responder Force Takes to Sea at BALTOPS", *USNI News*, 21 June 2019, available at <https://news.usni.org/2019/06/21/new-u-k-led-maritime-first-responder-force-takes-to-sea-at-baltops>.

the Baltic Sea, with forces acting under UN mandate. In the realm of anti-submarine warfare, NATO exercises MANTA and MONGOOSE directed by Commander Allied Submarine Forces NATO (COMSUBNATO) for Commander Allied Maritime Command (MARCOM) have grown in importance and quality. Aimed at improving tactical anti-submarine warfare (ASW) performance at the task group level, MONGOOSE practises in the North Atlantic, while MANTA is conducted in the Mediterranean.¹¹ These took the place of a number of small allied ASW exercises and NATO's DOGFISH exercise series as financial and fleet size considerations after the Cold War counselled for consolidation. Their recent expansion was also linked to a growing awareness of NATO ASW being practised less and Russian submarine capabilities strengthening.

TRIDENT JUNCTURE 2018 was the largest NATO exercise since the end of the Cold War, involving 10,000 tracked and rolling vehicles and major naval deployment, including the Harry S. Truman Carrier Strike Group.¹² NATO moved 7 brigades in 30 days, all in rough weather, and Russia paid attention. There were, of course, challenges to overcome: troops arrived in summer uniforms and tyres were not fitted for the snow and ice. Most of all, the alliance had months to prepare; this was not a snap exercise or a demonstration of what allies could deliver at short notice. But it was considered a huge strategic communications success among the allies and in terms of messaging to Russia.¹³

11 On Dynamic Mongoose 2020, see <https://shape.nato.int/news-archive/2020/dynamic-mongoose-concludes>.

12 Jack Watling, "NATO's Trident Juncture 2018 Exercise: Political Theatre with a Purpose", *RUSI Commentary*, 20 November 2018, available at <https://rusi.org/commentary/nato%E2%80%99s-trident-juncture-2018-exercise-political-theatre-purpose>.

13 There have been a series of scholarly and think-tank studies on the modern ASW challenge of a resurgent Russian Federation Navy, beginning with Kathleen H. Hicks, Andrew Metrick, Lisa Sawyer Samp and Kathleen Weinberger, *Undersea Warfare in Northern Europe*, Center for Strategic and International Studies (Washington: CSIS, 2016), available at <https://www.csis.org/analysis/undersea-warfare-northern-europe>. See also Magnus Fredrik Nordenman, *The New Battle for the Atlantic: Emerging Naval Competition with Russia in the Far North* (Annapolis: Naval Institute Press, 2019).

Assessing the Value of Exercises in Improving Credible Capability

As noted, the value of an exercise to strategy depends on the strategy. Consider first the most typical purpose of exercising: the improvement of interoperability and collective capability.

Do these exercises tend to build capability and integration between participants? At the level of military cooperation, the answer has to be yes, when well-planned, multinational exercises create opportunities for navies to practise things they cannot practically do at home. Indeed, only a few allies can reasonably deploy an entirely national task group for any length of time or at all given current fleet sizes. National skill sets and capability focus areas vary; there are a range of best practices to learn from. These exercises facilitate experimentation and the transfer of knowledge.

It is also true that exercises create bonds of trust and understanding between commanders and their staff, and group pride among crews. They reinforce standard operating procedures and test communication systems and align processes and tactics for things like salvo fires, ASW screens, carrier strike and amphibious operations.

Finally, they tend to bring the potential adversary to us, so we can have a look at them. In the Cold War, one purpose of Lehman's robust exercises was to goad and provoke the Soviets out so that the allies could collect on them and train against them.¹⁴ A forceful Russian response may have given some politicians pause, but for the navy at the time, it was an opportunity. This begs a critical issue: the alignment of rival military and political cultures and paradigms. It is arguable that exercises had their strongest deterrent effect when the political and military cultures of the US and USSR were aligned on both sides. Thus, a military posture was also a political posture and seen as such; more so when both sides' military and political leaders assumed that war was a serious possibility.

But accepting that well-planned and well-run exercises support naval training and group confidence, and provide intelligence collection opportunities, do such exercises add to NATO's deterrent posture, and if so, by how much? That is a more difficult question, as it requires us to first weigh the value that exercises add to collective alliance maritime capabilities, a foundation of deterrent posture. It is arguable that the mere fact of assembling ships at sea and conducting basic drills has a small deterrent effect, but it is likely to be small. If those exercises are conducted without accompanying and expressed political intent or a political message (and most are

14 See Lehman, *Oceans Ventured*, 121–125.

not), then the routine exercise cycle may do more to preserve peace by signalling no intent to challenge an adversary and no escalation of presence outside seasonal norms. That is not strictly deterrence, but more like confidence building.¹⁵

The same could be said of involving rivals in the more routine allied or NATO exercises. But beyond confidence building, there might even be an argument for deterrence through including rivals in such exercises if we re-think the concept a bit. Classical deterrence focuses on costs imposed by the threat of kinetic means. But including rivals in exercises raises the diplomatic and political costs of acting in a way that would rupture the defence relationship. As the Crimea demonstrated, this is not likely to trump more vital national interests. But it is a cost, nonetheless.

In NATO, the first building block of alliance maritime capability are the exercise programmes designed to create trained and ready, integrated maritime task groups for the NATO Response Force in the NATO Response Force (NRF) rotation cycle.¹⁶ To answer the question of deterrent value for the NRF, we need to consider several factors:

First, the impact of the exercise series on the task group commander and staff. How long will the command staff remain in post after the exercise? The rate of staff depopulation will determine the residual value of each exercise for that specific task group. Second, the extent to which exercise objectives test vital war fighting skills at task group level, not individual ship level. There was some tendency in prior years for exercises to quietly be more about individual ship workups than advanced task group operations such as joint salvo exercises, multi-ship ASW and fifth-generation fighter support of amphibious assaults. Third, of the objectives we have set, how

15 Although not the topic of this paper, the question of the deterrent efficacy of 'routine' exercises raises a parallel issue of the efficacy of operational deployments aimed at deterrent presence. The question arises of when considering what posture NATO or allied forces should adopt in the vicinity of potential adversary exercises like ZAPAD, or major deployments such as the KUZNETSOV Battle Group deployment of 2016. Similar dynamics apply: if that presence is token, it sends a signal that we are watching and that has value. It contests maritime geographic claims to primacy and that has value. But whether it is deterrence needs a better analysis. It might also be a form of confidence building in that we are responding in the expected way, with a typical scale of forces.

16 See generally 'NATO Response Force', NATO, available at https://www.nato.int/cps/en/natohq/topics_49755.htm. For a discussion of maritime preparation, see 'France takes the maritime command of the NATO response force', *Ministère des Armées*, 28 June 2010, available at https://www.defense.gouv.fr/marine/content_english/latest-news/france-takes-the-maritime-command-of-the-nato-response-force.

many were missed because of operational defects in the task group and the Standing Naval Force (SNF)? And how many were missed because nations withdrew their assets from the exercise for another task? Critically, fourth is the correlation between the exercise task groups and the ships that will remain in the SNF after the exercise. While guests dropping into the Standing NATO Maritime Groups (SNMGs) for the sake of the exercise are welcome, that should not take the place of stable manning of the SNF. Historically, the percentage of ships remaining in the SNMGs after an exercise can drop rapidly. Those skills get dispersed across national fleets, which has its own value but is not the same as a well-trained and ready SNF.

The second building block of alliance maritime deterrent capability provided by exercises is their impact on a trained and interoperable alliance fleet as a whole. The first factor to consider in assessing this is the dispersion ratio of crews onboard participating ships. How much of the crew will be veterans of the exercise the next time that ship is in a major NATO exercise? How long is the ship considered NATO-trained? A second factor is the ratio of ship exercise participation to fleet size. Smaller navies mostly do better here; less so the larger ones. How much does the exercise experience gained transfer to the national fleet? This raises interesting questions of the employment of the same national naval assets in multinational exercises, creating a sub-fleet of very experienced ships. That is a rational choice, but of most value to NATO if it is those ships that are ultimately committed to the SNF or deployed in a crisis. Finally, there is the percentage of navy personnel who have had formative allied exercise experiences throughout their careers across individual navies and across the alliance fleet. What is the overall dispersion of experience? A viable pan-NATO exercise programme would ideally achieve a credible level of training for the NRF task groups on deployment, those to be on call, for the national and alliance fleet as a whole, and for the 'alliance crew' as a whole.

Assessing the Deterrent Value of Exercises

Looking beyond the role of exercises in advancing allied maritime capability, there is the direct relevance of exercises in assuring allies and deterring potential adversaries to consider. To begin with assurance, there is a strong argument that exercises have a high assurance value, although to some extent this could be predicated on the appearance of capability rather than hard or proven capability itself. It is valuable to navies to be seen as valued operational partners by their allies. It is also useful politically for individu-

al governments in selling their alliance policy to their public. Political leaders applaud these benefits as a visible demonstration of *matériel* capability, which it is, and implicitly of political resolve, which it is to a more limited degree. A final consideration is that these are self-created metrics of assurance value. Demonstrations of assurance tend to focus on what we have deployed, our presence, not what the rival has in their order of battle, or their presence. That comparative dimension takes us out of the realm of assurance and into deterrence.

We often say that large exercises show resolve, and to a degree they do, but the resolve they show is the resolve to hold that exercise. It is what it is. Resolve in peacetime is a different situation from that in a crisis. And this is particularly so where military posturing is not equated with political resolve by the other side. The act of putting lots of ships and aircraft together with lots of preparatory time is not an accomplishment in deterrent terms unless both sides think that the time frame or the scale of effort was meaningful; or where the adversary could not mount the same posture and exercise in the same time frame and that time frame is moreover relevant to the strategic situation. Speed of response does have deterrent value if executed within a meaningful response time. There is also the factor of normalisation. Each exercise is not writing on a blank sheet of paper. After more than 40 years of BALTOPS, there would be a serious impact if one exercise were skipped. Each becomes part of a deterrent equilibrium.

A second factor commonly associated with exercises and deterrence is geography. Where a naval exercise happens is often as important as the capabilities demonstrated or the size of the assembled force. The early Cold War exercises took place in locations the allies expected to defend: in the North Atlantic and the Mediterranean. In the 1980s, geography expanded to where the allies intended to press their advantage: in the Norwegian Sea and the Baltic. The geographic location of an exercise is a form of peacetime political resolve to claim spheres of primacy or influence or to signal willingness to challenge a vital adversary security zone, such as the Russian SSBN Arctic Bastion.

The relationship between deterrence and exercise geography is complex. Does deploying a few frigates to sensitive waters, which historically provokes a rival, add to deterrence? There are arguments on both sides. Such deployment signals that the deploying powers are not themselves deterred from venturing into those waters in peacetime. That does not create new capabilities to deter or dissuade, but it does show a kind of resolve to compete for access and presence, where a potential adversary has a proprietorial attitude towards its nearby waters. By way of contrast, OCEAN VENTURE arguably did deter in its combination of sizeable deployment

and demonstration of deception techniques in threatening vital Russian strategic assets in sensitive geography.¹⁷ It is worth noting that this also raised critical issues of escalation, which are addressed below.

Finally, there is the value proposition of implicit and formal public exercise messaging within a strategic communications paradigm, and here the impact of exercises may indeed be greater than expected. What if the playing field of deterrence for both sides were the communications media and public perception? One might argue that TRIDENT JUNCTURE 2018 was as much about signalling capability and having capability¹⁸. It was meant to impress and it did impress, in a TV news kind of way. Now—and this is the critical point—if the potential adversary thinks the same way, then this way of playing the deterrent game can have real deterrent effects. We do have some indications that the Russians also enjoy putting on a good naval show for the world and for their own public. One challenge in exercise signalling is the reluctance to publicly tie an exercise to an intended deterrent signal against a given party. Such exercises are almost universally characterised as routine, already scheduled and having nothing to do with the rival that the exercise partly exists to signal to.

Deterrence Management of Exercises

The emerging field of deterrence management brings together these various factors to calibrate an exercise strategy of deterrence. A lot of thinking lately has gone into how institutions and headquarters conduct deterrence management, and much of this has to do with the scheduling and planning of exercises. This work is still at an early stage, but some lessons are becoming clear on what makes sense and what might need to be refined.

As noted, a preliminary question is what the strategy seeks to do. The notion of Great Power Competition is much in vogue these days. This idea has its flaws; it hides as much as or more than it elucidates. It is also at odds with fundamental political notions of solidarity and mutual respect among allies, and perhaps norms of diplomatic relations more broadly. At its crudest, Great Power Competition implies that there are only a few important pieces on the chessboard and that the rest are pawns in the game, possibly to be traded, which is very transactional, very Trumpian if taken too literally. But in a broader and more principled sense, systemic competi-

17 See Lehman, *Oceans Ventured*, 85–87.

18 See Watling, “NATO’s Trident Juncture 2018 Exercise”.

tion does exist over values, ways of life and the success of political and economic models. Therefore, are we deterring or competing, and if it is the latter, over what? This question matters for deterrent strategy. This analysis will assume that, in terms of the Russian challenge, we are deterring in the classical sense. One might give a different answer when discussing China.

First, what is it that we are measuring in exercise deterrence management? Deterrence is a combination of capability and political will as perceived by an adversary. One entry level problem is likely to be the inability to overtly measure allied solidarity and political will. So half the equation is often missing to begin with. Then we need to be able to assess the credible capability that the alliance possesses, both in reserve and deployed. That ought to be more than just raw numbers of ships and their capabilities, as described in Janes, but even that might be a step in the right direction. A further option is to count numbers of exercises in a span of time, or numbers of personnel involved in the exercise. That has a very nebulous relationship to deterrent posture from a rival's perspective. A moment's reflection on what we pay attention to when they deploy provides a clue: the numbers of advanced offensive platforms, their range arcs, where they are and how concentrated they are. Proximity to joint supporting forces is also important. Counting auxiliaries and logistics vessels makes sense when factored for that purpose, but we need to be clear about what we are measuring.

Then come the problems of deterrence theory and psychology. First, are we in a deterrent situation at all? Is the potential adversary really like a coiled tiger, ready to pounce the moment we take our eyes off the ball? Or are there no current disputes which could escalate to the point where an adversary would be tempted to use force or be seized by an overriding fear that we will? If neither is true, there is arguably nothing to deter and thus measuring deterrent effect is difficult. That does not mean that the demonstration of deterrent capability through exercises is meaningless; this has to happen in peacetime to influence political decisions in a crisis. But the deterrent effect does not occur now, but later.

If we are in a current deterrent dynamic with a hot issue on the table, then the hard question gets begged: What exercise posture deters better: a passive posture, a predictably robust posture, or an unexpectedly robust and forward posture? Conversely, does a modest posture de-escalate or invite adventurism by displaying weakness? There is often a sense that deterrence management is about maintaining an Aristotelian golden mean between extremes. We talk of 'peaks of activities' and 'troughs' but their implications are not sufficiently theorised. Our instincts seem reasonable to us, as satisfied *status quo* powers. But does an exercise deliver a deterrent ef-

fect from a rival's perspective? That's the perspective that ultimately matters.

A consideration of deterrence via exercises usually leads to a consideration of the risks of escalation. They are parallel concepts, carrying heavy historical baggage. The problem is that they attempt to characterise the same activity and there is some confusion in their usage. How can one tell a deterrent posture from an escalatory one? As noted, the scale, location and intent of the exercise are critical, as is its regularity in the annual exercise calendar and the current geostrategic situation. Assessment here is complex, and doubly reflective: we need to make the judgement but can only do so by putting ourselves in the place of the 'Man on the Kremlin Omnibus' and making a call about what he would consider truly threatening. Note that, by definition, this will be different from what a rival says publicly.

The inverse of the escalation issue is the lower limit of efficacy in a deterrent strategy. Deterrence is often asked to bear a greater load than it can: deterring war and aggression is the core stuff of military posturing, including exercises. But deterring less than that—things under the threshold of military confrontation, like terrorist, hybrid or grey-zone activity—is more problematic.

An effective allied deterrent posture requires coordination, which is difficult to achieve when individual allies conduct individual or small group coalition exercises or deployments, sometimes in geographically sensitive territory. It is often said that the Kremlin does not distinguish between allied national actions and NATO actions. If that is true, it places a premium on inter-allied coordination of exercise plans and deterrent posture, governed by an overarching deterrent management process. This is not a demand for NATO to run the entire allied exercise programme; the flexibility provided by individual allied efforts has always been valuable in acting as a leading edge for policy and posture development, from OCEAN VENTURE to BALTIC HOST. But that works effectively where there has been solid coordination at the national and NATO levels, so that surprises are avoided and messaging is prepared.

Finally, there are financial and pragmatic matters to consider. Strategic situations can change rapidly. This places strategists and political advisors in a difficult position, especially if they have to counsel that a major exercise is no longer a good idea months after monies and forces have been committed, troops moved, strike aircraft are in place, the B52s are in

Mildenhall waiting to fly and exercise staff have spent thousands of hours in scripting injects and planning the distinguished visitors day.

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Clausewitz, Mahan and (Me): The Process of Crafting Naval Strategy

Bruce B. Stubbs

Introduction

I have nothing in common with Clausewitz and Mahan, except for producing naval Service-level strategies based on their ideas for the past thirty years in what is accurately called the “sausage-making” process. What follows are a few of the lessons I have learned about this process—lessons which, for the most part, reoccur because of the constant turnover of civilian and military personnel.

I need to begin with five overarching lessons. First, draft your strategy using the ends–ways–means formula as it provides a clear, easy-to-follow train of logic, and, moreover, ultimately strategy is the interaction between these three variables within the context of risk. As Colin Gray notes: “... the game has always had to be about ends, ways, and means.”¹ Second, accept—do not resist—and address these realities that significantly impact the strategy-making process:

- Whatever their form, all strategies are political documents that reflect accommodations, compromises, overt and hidden agendas, as well as prejudices.
- Senior leaders are caught up in pressing matters of the day and have limited time to reflect on weighty long-term issues. They engage in *strategic* thinking to solve the pressing matters, like annual budgets, but few have the time or the inclination to engage in long-range, Service-defining *strategic* thinking.
- Almost everyone, regardless of their staff function, all fancies themselves as a strategist armed with the next big idea for the way ahead.²
- The staffing process dulls all strategies. At best, it knocks off the rough edges and protects the interests of the decision makers from dangerous

1 Colin S. Gray, *The Future of Strategy* (Malden, MA: Polity Press, 2015), 10.

2 Jobie Turner, “Confessions of a Failed Strategist”, *USAWC War Room* (web), 5 November 2019.

currents. At worse, the tumbling and polishing of the ideas in staff reviews wear them down to almost nothing.

Third, Service-level strategies are strategies signed by a Service Chief describing both the employment of Service forces and the development of Service forces. There is a critically important difference between the employment and development components of a Service-level strategy. For the employment component, the forces are the “means”, whereas for the development component, the forces are the “ends”. This dichotomy has significant implications when constructing a strategy’s framework.

Fourth, do not conflate strategy and planning. Regrettably, much of what passes for strategy is actually planning. Strategy is about setting priorities, such as the allied strategy of “Germany First” in the Second World War. Strategy is your vision of what you want to do, and it provides the parameters for your plan; your plan is how you will actually do it. You don’t create a strategy with a plan. You execute it with a plan.³ Finally, write your strategy with implementation in mind, as well as the narrative you intend to use to communicate your strategy.

Lesson One: The Five “Ws”

Before plunging into the strategy production process, spend time answering the five basic “W” questions of journalism—the who, what, where, when and why. Analysing the five “Ws” allows you to identify the problems that create the need for a strategy, the knowledge of which is the starting point for framing the strategy’s objectives and determining the best way to craft it. Start the process with an inclusive session to hammer out agreement on the five “Ws”. The dividend on this investment will pay out in almost every phase of the process.⁴

Lesson Two: The Strategic Problem

Focus your strategy on the dominant strategic problem confronting the Service. This forces you to decide on what is important in the current and

3 Huba Wass de Czege, *Commentary on “The U.S Army In Multi-domain Operations 2028”*, (Carlisle, PA: Strategic Studies Institute/U.S. Army War College Press, April 2020), xix.

4 Jobie Turner.

future security environment. Without a clear problem to solve, the security environment can become unwieldy and obscure what is important. Moreover, its use keeps you out of the realm of the abstract by forcing concrete, specific terms and coherent solutions into your strategy.⁵ Note, since a Service-level strategy has a force employment component and a force development component, each component requires its own distinct but related problem.

Lesson Three: Central Idea

Develop a central or “big” idea (such as President John F. Kennedy’s “Go to the moon!”) that binds the ends, ways and means of your strategy. This big idea must be explicit enough to provide planning guidance to those designated to implement and resource it, but not so detailed as to eliminate creativity and initiative at subordinate levels.⁶ When he was the Under Secretary of the Navy in 1912, Mr Bob Work developed this central idea: “A Fleet built and ready for war ... operated forward to help preserve the peace and protect American, allied, and partner interests.” The kernel of his central idea was: “Providing freedom of access in peace and war”.

Lesson Four: Theory of Victory

In addition (or perhaps as an alternative) to beginning with a central idea, identify the theory of victory for your strategy. Good strategies are based on a thorough survey of the resources available and a deep understanding of the adversary and their strategy. This will often result in a sound causal explanation—a theory of victory—that underlies the strategy. As opposed to the central idea, which is a succinct summation of the essence of your strategy, a theory of victory is a detailed description that encapsulates how your ways and means converge with achieving your ends. This ensures coherence in your thinking. A theory of victory explains why you think your actions will work or, in other words, you will succeed for the following

5 Jobie Turner.

6 UK, Royal College of Defence Studies, *Getting Strategy Right (Enough)* (Shrivenham, UK: Defence Academy of the United Kingdom, 2017), 20.

reasons. Indeed, a theory of victory may be more appropriately termed a theory of success.⁷

Lesson Five: Purpose

Know the purpose of your strategy. This lesson is so fundamental, so basic and so obvious that the gentle reader may likely roll his or her eyes in disbelief on reading its inclusion. Unfortunately, more often than not, naval leaders lack clarity on defining and comprehending the purpose of a strategy. Naval Service-level strategies are produced for three overarching purposes: (1) to explain the need for the Service; (2) to explain how the Service meets that need; and (3) to explain where the Service is heading. Any other purpose—such as addressing a changing world, codifying current thinking or sending a signal to potential competitors—is actually a subset of these big three.⁸

Lesson Six: Audience

Direct your strategy at your intended primary audience. Hard on the heels of understanding your strategy's purpose, this is another rudimentary lesson that is often violated. Most naval Service-level strategies are primarily written for the Office of the Secretary of Defense, Congress, the Joint Staff and the White House Executive Office to ensure that the Service's contribution to national security is understood and resourced. However, senior leaders will invariably direct inclusion of other audiences, such as "deck plate sailors" or the American public, which requires different content and writing style. Service-level strategies help their intended audiences make informed resource and policy decisions. Indeed, they fulfil Samuel Huntington's prescription of explaining the Service's role in implementing national security by describing how, when and where the Service expects to protect the nation. Without such a description, the public and political

7 Huba Wass de Czege.

8 Peter Swartz and Karen Duggan, *U.S. Navy Capstone Strategies and Concepts (1981–1990): Strategy, Policy Concepts and Vision Documents*, CQR D0026415.A1/Final December 2011, Arlington, VA: CNA Studies and Analyses, 2011.

leaders will be confused as to the Service's role, uncertain as to the necessity of its existence and apathetic to its requests for resources.⁹

Lesson Seven: Service Chief Access

Insist on direct access to your Service Chief to ensure his or her guidance is direct and clear without any interlocutors. It is imperative that you have direct access if your efforts are to yield an effective result which the leadership is committed to executing. Service Chiefs must play an active role because there are too many diverse views and interests to overcome across the Service, which will result in a lowest common denominator product. Frequent and unimpeded access is needed to: (1) implement Service Chief guidance, not guidance altered by staff agendas; (2) provide unfiltered advice to the Service Chief, especially alternative views; and (3) proceed quickly and with a minimum of interference from others.

Lesson Eight: Strategy's Essence

Make the hard choices, which is the essence of strategy making. Unfortunately, most Service-level strategies, especially at the unclassified level, studiously avoid making hard choices. For an effective strategy, early in your production process: (1) state the challenges confronting the Service and identify essential choices; (2) identify the Service's advantages and adversary weaknesses; (3) establish a pecking order for resources to achieve objectives; (4) state what objectives are not going to be sought; (5) explicitly link the means available for achieving the ends; and (6) make choices and set priorities and policies regarding:

- Capacity vs. capability vs. wholeness
- Near-term vs. long-term risks
- Current readiness vs. recapitalisation
- Diverse, accumulated tasks vs. core missions
- Avoidance of a hollow force
- Operational deployment requirements

9 Samuel P. Huntington, *National Policy and the Transoceanic Navy*, US Naval Institute, Proceedings vol. 80, No.5, May 1954.

Lesson Nine: Strategy Consistency

Incorporate some degree of previous Service Chiefs' strategic thinking into your strategy for consistency. Regardless of the Service Chief, the Service as an institution has enduring strategic objectives and priorities that require incorporation into a consistent strategy for long-term implementation. The benefits are enormous: (1) assured continuity of strategic direction over the fielding of major platforms and weapons systems; (2) no requirement for an incoming Service Chief to craft from scratch a "new" Service strategic direction; (3) unity of effort on the Service's way ahead; (4) reduction of false starts and non-productive efforts; and (5) a consistent Service message for strategic communications. Recognise, however, that the need for an incoming Service Chief to be a champion of "new" concepts, reform or transformation chafes against the requirement of some continuity.

Lesson Ten: Strategy Assessment

Evaluate your strategy's probable effectiveness against these standards: (1) acceptability, (2) feasibility, (3) suitability to the circumstances, (4) sustainability and (5) adaptability. Without an honest and rigorous evaluation, it is possible to assume a strategy is easier to implement than reality will dictate. Acceptability to the leadership is obvious; if it is not acceptable to your Service Chief, it is going nowhere. Feasibility requires an assessment of whether the Service has the resources to carry out the strategy. A strategy that does not conform to national objectives or circumstances is unsuitable. Sustainability refers to more than supporting resources; it is also whether personnel can carry out its implication over the long term. The apocryphal quote by field marshal von Moltke that "no plan survives contact with the enemy" can be translated as no strategy can survive a changing security environment if it is not adaptable by design.

Lesson Eleven: Maps Not "Eye-Candy"

Always use maps rather than images of ships, aircraft and personnel in a strategy. The use of such images conveys a lack of seriousness about the strategy document itself. Moreover, the use of such images in "slick and glossy" versions of Service-level strategies often bears little direct relationship to the accompanying text. While the geography represented on a map

does not define a nation's destiny, it does provide a geospatial context within which a strategy is developed. Indeed, Colin Gray observed that, "Physical geography can be either enabler or disabler, depending on how wisely it is exploited. Geography is a stage set by forces beyond much human control. ... (It) charges a price for the rewards sought through its exploitation."¹⁰ Well-articulated spatial content, with geographic arguments supported by maps, helps strategists to present a more effective case to their audience.

Lesson Twelve: Lists Are Not Strategy

Do not confuse the compilation of imperatives as your strategy. Though its language is unusually clear, the 2018 National Defense Strategy resembles "The Twelve Days of Christmas" with its litany of twelve objectives, ten investment priorities, eight operational problems and six critical challenges. With so many imperatives to choose from, attempting to prioritise a derivative Service-level strategy based on these broad and sometimes competing priorities can become a minefield. The profusion of priorities allows the process of developing a strategy to devolve into a "buzzword bingo" justification of desired capabilities, which is described as "cherry-picking" desired imperatives. The results are lists of goals, no priorities and ineffective strategy.

Conclusion

After thirty years in the sausage-making business, there are additional lessons to share, but out of respect for your time (and forbearance), these lessons suffice. My goal is to pass along some useful knowledge about the process, learned the hard way, to those who perform this task now and in the future—a task that President Eisenhower said, "...requires the hardest kind of work from the finest available staff officers". Ike was spot on!

10 Colin S. Gray, *Perspectives on Strategy* (London: Oxford University Press, 2013), 122.

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Conclusion and Wrap-up

Julian Pawlak and Johannes Peters

Introduction

The anthropogenic dependency on water and the human need to cooperate with each other are two constants of evolution and its concomitants of civilising development. While the latter represents a comparatively modern phenomenon, it stretches from individual and tribal relationships towards the creation of federations and alliances of contemporary nation states in the course of time. It must be pointed out that the world's most famous military alliance, the North Atlantic Treaty Organization (NATO), is a merger of a special kind due to its transatlantic link, the combination of continental and sea power, and the latter's embodiment in its name. The alliance's physical division by the sea, the North Atlantic, is therefore not necessarily a limitation but an opportunity, besides all of the vulnerabilities and exposures such maritime dependency includes.¹ With the United States as its most sophisticated and militarily potent member, a *sea power* above all, and with the aforementioned characteristics, NATO incarnates a maritime alliance on whose basis it succeeded in its as yet uttermost formative challenge, the Cold War.

NATO's maritime core and its 2011 Alliance Maritime Strategy in particular are a main reason for the creation of this volume. It was inspired by the considerations made for and at the *Kiel International Seapower Symposia* in 2018, 2019 and 2021, which provide an assessment of allied maritime strategy. Each symposium focused on one aspect of the "strategic trinity": ends, ways and means.² Originally recalling the need to revisit NATO's 2011 strategy due to recent geopolitical developments and the re-emergence of great power competition, the symposia's findings and mass of challenges ahead led to the publication of a book focused not solely on the

1 Geoffrey Till, *Seapower. A Guide for the Twenty-First Century*, 3rd edition (Routledge: New York 2013), 37.

2 The Kiel International Seapower Symposia were hosted by the Institute for Security Policy at Kiel University's (ISPK) Center for Maritime Strategy & Security. Their success is the result of the great teamwork of Sebastian Bruns, Jeremy Stöhs, Adrian Neumann, Randy Papadopoulos, and this volume's editors.

transatlantic alliance. Yet with NATO in the spotlight of most of its chapters, the authors of this volume present strategic examinations on further maritime scenarios and collaborations, as the title illustrates.

The 21st century is frequently recalled as a maritime century. Yet, the multitude of looming challenges it will accommodate can barely be foreseen: be it the rapid advancement of unmanned and autonomous systems on, under and above the water surface area, leading naval forces to be able to send out unprecedented numbers of naval units onto the seas; the ongoing polarisation and division of societies, nations or even long-standing alliances based on populism and nationalism; or the immediate effects of the hitherto insufficiently tackled climate crisis, which is changing the world's oceans, expanding naval forces' areas of responsibility, and putting allied territory at risk without any use of military force. The authors brought together in this volume provide suggestions, inspirations, and recommendations on some of the most relevant topics allied maritime strategic thought will have to deal with in the coming decades. To this end, the chapters of this book follow a structure of four sections, aligned according to their respective content.

1. The first section serves as a principle basis for this volume and the consecutive articles. In this regard, first and foremost, Sebastian Bruns provides a fundamental introductory chapter on contemporary allied maritime strategy. "Together...From the Sea" underlines the extraordinary role of maritime strategies in contemporary allied contexts—explicitly, as mentioned above, not only in a NATO, but in a much broader context by analysing both, NATO's Allied Maritime Strategy and the EU Maritime Security Strategy, considering the United Nations, as well as examining how the alliances perform as maritime players. In providing the framework to train for and execute operations at the upper end of the intensity spectrum, NATO fulfils its responsibility of sharpening the allied spear, while low-end maritime security missions are well placed under the flag of the EU. Sebastian finally emphasises that strategies are always political documents and demands a research agenda on how strategies are actually operationalised.

What follows is a focus on the North Atlantic alliance. Keith Blount examines the question of whether the 2011 Alliance Maritime Strategy is actually in need of revision. He identifies its continuing relevance even for today, but reminds us that adaption and strategic adjustments are useful in light of changing strategic circumstances and should follow careful considerations, like, in this case, the NATO 2030 process, and should include the political willingness to do so.

As a third pillar, Sarandis Papadopoulos looks into the history of combined and joint operations at sea. With his granular tour d'horizon, he identifies and explains difficulties and opportunities allied navies had to face in the past. Using the carved-out reflections, he provides general implications for today's naval analysts and strategic thinkers.

2. Section two is organised in two parts in order to analyse specific threats and particular theatres of interest for strategic planners. On the one hand, the plethora of such threats in recent years encompasses the surpassingly considered challenges of hybrid and grey-zone activities, which are particularly described by Frank Hoffmann in relation to the maritime activities of China, Russia and Iran. His proposed holistic approach is also needed to tackle the further mentioned challenges. Either the growing undersea capabilities and technologies and the need for in-depth anti-submarine warfare, as described by Johannes Peters, or the "relentless hazard" of climate change, exemplified in a NATO context by Alix Valenti, represent threats that demand comprehensive approaches in a federated manner. As the relevance of naval forces is often related to a nation's dependency on maritime trade, Dirk Siebels offers a refreshing perspective on the threats to global shipping with a focus on the shipping industry. A closer look regarding maritime domain awareness and deeper cooperation between the commercial sector and navies should be of interest to the different actors. Continuing at the lower end of maritime operations, John Sherwood examines the European Union's actions in the Mediterranean and the independent operations of European navies outside NATO structures due to them being confronted with diverging actors in the EU's southern waters. On the other hand, particular theatres demand specific strategic and operational considerations. This includes Europe's 'Northern Flank', in whose regard Julian Pawlak makes the case for a holistic view on the North Atlantic, the Baltic, the Norwegian, and North Seas. With a bigger focus and from a Swedish point of view, Niklas Granholm focuses on the North Sea, Kattegat and Skagerak, which are often rather neglected maritime areas of operation. Adopting a different spotlight, Pauline Pic and Frédéric Lasserre look at NATO's possible role in the Arctic. The alliance, so they argue, should be present in the High North but in a way that avoids causing a security dilemma with regional actors, such as Russia. Turning towards NATO's Southern Flank, Deborah Sanders offers insights into strategic considerations for the Black Sea. Her chapter represents a predominant view on Chinese activities in the region, which are an increasing factor due to China's Belt

and Road initiative and, as she argues, pose austere challenges to NATO and only offer concrete opportunities for action to a lesser extent. Another perspective on China and its PLAN in particular is offered by Sidharth Kaushal. He proposes the idea of strategic hedging for NATO and, *inter alia*, it opening up flexibly to cooperate with different partners in the region in order to manage the rising PLAN. In a complementary fashion, James Goldrick provides an Australian perspective on allied maritime strategy and, in doing so, makes the case for a more robust European security policy on its continent and the adjacent waters, to relieve the United States of its duties and responsibilities in the Asia-Pacific region.

3. Section 3 offers insights into the complex opportunities and challenges maritime strategic planning and naval operations overall will have to face in this century. It points out the necessity of cooperation and integration, as explained by Sarah Tarry and Kaspar Pajos in the context of NATO's 360-degree approach. Subsequently, Jeremy Stöhs looks at "High-End threats" and "Low-End challenges" for allied navies, which include the increasing proliferation of and demand for high-end warfighting capabilities, not least due to current great power competition. New opportunities and challenges alike demand changes to established methods and procedures, and the ability to break new ground. Tom Guy provides such an overview of what can be expected as fundamental in shaping 21st century naval warfare. With any technological developments in the near future, he explains, the human commander will still want to be in, or on the loop, at least. To decide on how to prepare best for future developments, not only technological ones, well-founded prediction methods and elements of strategic foresight, combined with structured intelligence, are required. Jim Fanell analyses federated maritime intelligence operations and the need for Western alliances to adjust them, particularly in regard to Chinese activities in the Asia-Pacific region and the increasing presence of Western naval assets in the same place.
4. The volume's final section offers three different examinations on strategic planning. Firstly, from a practical point of view, Chris Parry examines experiences from the Falklands War. He accurately points out the difficulties allied navies have to deal with, particularly in regard to the implementation of strategic plans drafted and designed during peacetime. Jim Bergeron continues and looks at the function and effect of exercises with the goal of a maritime strategy of deterrence. He explains

the changing focus of NATO's naval exercises and shows the difficulties, assessments and psychological influences inwards and outwards which have to be considered. As a closing remark, Bruce Stubbs provides insights into "The Process of Crafting Naval Strategy". Presenting the reader with an overview of the "sausage-making" process, Bruce specifies 12 relevant lessons for the "art and [...] science"³ of writing strategies and conceptualising strategic documents.

Alliances and strategists alike have to adjust frequently—to global and regional conditions, the will of their political leaders, and at best also to create a coherent course of action. The strategic process therefore doesn't end with the final draft and the publishing of a paper titled 'strategy'. Nor is it put to a halt. Strategic planning is an iterative end in itself. The ends, ways, and means of the alliance's strategic posture have to be constantly evaluated and adjusted against the backdrop of an ever-changing world. This process requires a holistic approach, incorporating all branches and allies on the military side, but, notably, also a scientific pillar to provide a sound assessment of political drivers and the intentions of potential partners and adversaries alike, as well as recommendations on how scarce resources can be utilised best to create a well-orchestrated fundament, amongst others with sufficient *bang for the buck*, to meet the challenges of the 21st century.

When one considers NATO and the West in the maritime realm, they must plan and prepare for an ever-increasing range of conceivable contingencies, running the gamut of the intensity spectrum. This ranges from high-end warfare to humanitarian assistance and disaster relief efforts. A future AMS must address how navies can escape the high-low conundrum, create a balance between the home game and the away game, remain prepared and ready to face the amount of challenges and maintain the initiative in the maritime domain. This volume provides an overview of the plethora of demands and threats allied navies and their strategists are facing. It further grants an outside view by widening the scope away from NATO's and Europe's home waters towards areas of responsibility that seem far away geographically, but are connected by the world's oceans and the global sea lines of communication.

As the editors, we are particularly grateful to each and every author for their excellent contributions and for being part of this book—BRAVO

3 Bruns, Sebastian, "Conceptualizing and Writing German Naval Strategy." In *Conceptualizing Maritime & Naval Strategy*. Festschrift for Captain Peter M. Swartz, United States Navy (ret.), edited by Sebastian Bruns and Randy Papadopoulos, Baden-Baden: Nomos, 2020, 37.

ZULU to all of you! We are further indebted to Dr Sebastian Bruns for his constant support throughout the years. Without his encouraging friendship, this book would not have been possible. Finally, we want to thank the Konrad-Adenauer-Stiftung for facilitating this endeavour with a substantial grant.

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view Commission in 2017, as well as before the U.S. House of Representatives Permanent Select Committee on Intelligence in 2018. He has an extensive list of published works regarding China.

James Goldrick had service around the world in the Royal Australian Navy and on exchange with the British Royal Navy. An anti-submarine specialist, he commanded HMA Ships Cessnock and Sydney (twice), the Australian Surface Task Group and the multinational maritime interception force in the Persian Gulf in 2002 and Australia's inter-agency Border Protection Command in 2006-2008. Other commands included the Australian Defence Force Academy (ADFA) (twice – 2003-2006 and 2011-2012), and the Australian Defence College (2008-2011). He is an Adjunct Professor at the University of NSW Canberra (ADFA), Adjunct in the Strategic and Defence Studies Centre at the Australian National University, and a Professorial Fellow of the Australian National Centre for Ocean Resources and Security at the University of Wollongong. He has published in many academic and professional journals and contributed chapters to more than 40 books. His books include: *The King's Ships Were at Sea: The War in the North Sea, August 1914 – February 1915*. A much revised and extended edition *Before Jutland: The Naval War in Northern European Waters, August 1914-February 1915* won the Anderson Medal of the Navy Records Society for 2015. It was followed by *After Jutland: The Naval War in Northern European Waters: June 1916-November 1918*. Other books include *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka* and, with Jack McCaffrie, *Navies of South-East Asia: A Comparative Study*.

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